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# THE ARGIVE HERAEUM



CHARLES WALDSTEIN











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THE ARGIVE HERAEUM









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# THE ARTS AND CRAFTS

HEAD OF HERA (page 189)

PROBABLY FROM THE WESTERN PEDIMENT OF THE SECOND TEMPLE







Waldstein, Charles  
Archaeological Institute of America  
American School of Classical Studies at Athens

# THE ARGIVE HERAEUM

BY

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NORTON, RUFUS BYAM RICHARDSON, EDWARD LIPPINCOTT TILTON  
HENRY STEPHENS WASHINGTON, AND JAMES RIGNALL WHEELER

IN TWO VOLUMES

VOLUME I

GENERAL INTRODUCTION, GEOLOGY, ARCHITECTURE,  
MARBLE STATUARY, AND INSCRIPTIONS



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TO  
CHARLES ELIOT NORTON  
FIRST PRESIDENT OF THE  
ARCHAEOLOGICAL INSTITUTE OF AMERICA  
THIS WORK IS DEDICATED











## NOTE

THIS work is issued by the authority and under the auspices of the Archaeological Institute of America and the American School of Classical Studies at Athens, which share the financial responsibility for it. The supervision of its publication has been intrusted to a Committee which consists of representatives of both bodies.

Each contributor has been left entirely free to express his opinions and sentiments regarding the subjects treated by him — even where in these he differed from his associates — and is therefore solely responsible for the statements made in the articles written by him.

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## PREFACE

THE excavations on the site of the Argive Heraeum were carried on by the American School of Classical Studies at Athens, with the active support of the Archaeological Institute of America, under my direction, during the four springs from 1892 to 1895.

In presenting this official record of the work there done, I venture to hope that this publication will in some degree be worthy of the excavations themselves. It cannot be denied that the site itself and the remains there discovered by us are of extreme and exceptional importance. No period of ancient Hellenic life, historic or prehistoric, is known to us at the present day, of which our excavations have not yielded instructive illustration. All the new evidence concerning the prehistoric period of the ancient classical world furnished by the Heraeum and other sites becomes the more important and illuminating from the fact that our excavations show an undoubted and continuous connection between the Mycenaean age, its immediate precursors and successors, and the historical periods of ancient Hellas. No other site can furnish such evidence in the same way and to the same degree. In this respect the Argive Heraeum holds a position unique among all sites of the ancient world hitherto excavated.

Should this publication be at all worthy of the results of our excavations, I feel that this will have been achieved in the face of exceptional difficulties, which made themselves felt in the work of excavation itself, as well as in every phase of the preparation and elaboration of the finds and their publication.

The young men who acted as my assistants at the excavations, who one and all stood by me so loyally in all difficulties and ultimately became so efficient in their work, came to me, with hardly an exception, as novices who, in those days, had not even been able to pursue a complete course in archaeology in any of the home universities (a want which is now being rapidly supplied in many American universities). In most cases, when they had thus become really efficient assistants they were called away by the offer of some appointment at home or by some other inducement, the organization of the staff was disturbed, and the same period of preparation and probation had to be gone through anew with others. Among those who remained with me for more than one campaign, and whose help was in consequence the more efficient, as the part they played in the excavations was more important, are Professor J. C. HOPPIN, Professor RICHARD NORTON, and Dr. H. S. WASHINGTON.

I should like to say at once that the proportion of work done by the several assistants at the excavations is not adequately shown by the part they take in the publication. This I regret much ; but it has been inevitable. I had hoped that all those who had done service at the excavations might in some way be directly associated with the publi-



cation. But it happened in many cases that, when it came to the work of preparing the material at Athens, and, still later, of writing on the material thus prepared, the former assistants were occupied elsewhere or could not find time for the work. Professor NORTON, who has since been made Director of the American School in Rome, is represented in this book by a short chapter, which is far from showing the prominent part he took in the excavation at the Heraeum and in the sorting and arranging of the finds at Athens. The same is true of Dr. WASHINGTON. So too the prominent part taken by Professor C. L. BROWNSON during the first year's work receives no acknowledgment at all, so far as his participation in this book is concerned, owing to the fact that his University work has kept him occupied in America since 1893. The same was the case with his colleague, our architect during the first year, Mr. THOMAS A. FOX, who furnished the excellent plan of 1892 (*American Journal of Archaeology*, 1893, VIII. Pl. xii.). His place was taken in the last year of excavation by his able successor, Mr. E. L. TILTON. Among those who find no place at all in the publication are Professor W. C. POLAND, Mr. JOHN ALDEN, Dr. C. L. MEADER, Professor BARKER NEWHALL, and Dr. J. D. ROGERS. The latter has, however, given a careful preliminary publication of the inscription on a bronze tablet found in 1895 (*American Journal of Archaeology*, Second Series, 1901, V. pp. 159 ff.).

In looking back upon my association with all these scholars, so different in temperament and training, I cannot help feeling intensely gratified when I recognize that all have become and remain my sincere friends.

I must further thank the Greek authorities, notably M. CAVVADIAS and his ephors, for the manner in which they furthered the work of excavation and were always ready to meet my wishes, while conscientiously fulfilling the duties which their office laid upon them. Our relations have been from beginning to end those of complete and undisturbed harmony and friendliness. I must also express my thanks in this connection to the Archaeological Institute of America, which provided about half of the funds for this excavation; and among those persons who privately contributed when funds were most needed I must record my sense of gratitude to the late Mr. JOHN TAYLOR JOHNSTON and to Mrs. J. W. CLARK, as well as to Professor HOPPIN and Mr. W. C. SCHERMERHORN.

Few readers are aware how large and important a part of the labor in such archaeological undertakings is given to the work of cleaning, piecing together, classifying, and studying the remains which an excavation has produced, before the results can be made public in a book. When I but mention, among other similar tasks, that about 265 baskets of vase fragments had to be cleaned, sorted, and, as far as possible, pieced together before they could be studied properly; that the same is true of thousands of small terra-cottas; that bronzes often were found in a shapeless mass in which all indication of their form, probable design, and inscribed marks were hidden by corrosion and incrustation, and that these bronzes had to be treated by a laborious and lengthy process of immersion in acids and of cleaning, before the original design and decoration

could be restored, — when I merely enumerate these facts, some idea will be gained of the important preliminary work necessitated before an account of the excavation could be presented in book form.

If such work always presents many difficulties, they were much enhanced in our case :

(1) The plan of our excavation could not be laid out on a large and permanent scale at the outset, and therefore provision could not be made for the proper storing and arrangement of the objects found that all might be kept together from one season to another.

(2) All our portable finds had to be transferred from Argos to Athens, where they were deposited in the National Museum. If such a transference of unclassified material — some in baskets, some in boxes, and some unpacked — contributed to confusion, the fact that in the National Museum we had twice to move from one room to another did not diminish these difficulties. In spite of these unavoidable inconveniences, I must here record the willingness on the part of the officials of the Museum to further our work, and I have much pleasure in thanking M. CAVVADIAS, the Director, and his distinguished assistants, MM. STAIS, TSOUNTAS, CASTRIOTES, and LIONARDOS.

(3) Our difficulties in this stage of the work were still further increased by my desire to carry out the suggestion, informally made, of the Managing Committee of the School, that all the students should make, for purposes of study, direct use of the material furnished by the School's excavations, and should therefore be drawn into the actual work of sorting and cleaning. I complied with this suggestion for a time, but soon found that not only the students, unprepared for such work, gained but little advantage, but the labor of arranging and classifying the material was impeded and made much more difficult.

(4) Finally, although, after I had resigned the Directorship of the School, I came to Athens every year and laid down the system of classification to be followed, the great difficulty to which I have referred above made itself felt most banefully in this phase of the work ; for the main supervision passed from one hand to another, and, in matters of detail, one new man had to take up the half-finished work of another at the point where it had been left.

All these difficulties recurred in another form when it came to the actual writing of the book. Not one of my assistants intrusted with the separate departments was present during the whole of the excavation, nor could they — with the exception of Professor HOPPIN and Mr. DE COU — remain for any continuous time in Greece while elaborating their material and writing their chapters. Still, the principle I followed was to allow each member intrusted with a department as much independence as possible ; and though I have arranged with each the general lines of his publication and have revised all the manuscripts, so that I may claim an organic unity of conception and execution for the book as a whole, I have not stood in the way of the expression of well-founded individual opinion, for which each collaborator deserves the credit and retains the responsibility. But, scattered as these workers were and changing their residence all over the globe, from



Egypt, Greece, and Italy to various parts of the United States, the extra labor which was entailed by the attempt to keep in touch with each man, the correspondence it necessitated, and the complications which increased the difficulties incidental to the publication of such work even under the conditions most favorable to speedy and facile publication, can easily be imagined.

The work of conducting all these matters through correspondence and the consequent delays were considerably increased by the fact that from England I had to communicate and arrange, not directly with the publisher and printer in America, but with a Committee which had to decide upon the ways and means of publication (which occupied some years), — a task to which the members devoted themselves with much sacrifice of time and labor.

The inevitable result was considerable delay in publication. For it is but right that I should state that my own manuscript (written more than four years ago), as well as that of Professor HOPPIN, has been in the hands of the Committee on Publication, ready for the press, for nearly three years. Thus, besides the difficulty of returning, when correcting proofs, to a subject which had lost much of its freshness and some of its familiarity, it was impossible to take note of the results of similar excavations which have since been undertaken and are still in progress ; while anticipations of important new light thrown upon archaeological inquiry by our finds and our publication, and for which a certain amount of honorable credit might be claimed, are not so manifest at this stage of publication. To recast the whole book was not possible. I have therefore left the manuscript as it stood, only adding a few footnotes with regard to work done since 1898.

I had hoped to publish both volumes at the same time, but owing to the delay of one contributor, we have determined to publish the first volume at once and to leave the second volume to follow within a few months. I regret this the more as Professor HOPPIN's work on the Vases, which has been ready for press since 1899, will thus be kept back still longer.

In spite of these regrettable delays, I do not think that we have been exceptionally long in bringing the results of our excavations before the public after their completion in 1895. When it is remembered that an interval of seventeen years elapsed between the completion of the excavations of Olympia in 1879 and the official publication in 1896, and that the excavations of the Acropolis of Athens, completed in 1889, have not yet been published, our own publication must be considered a comparatively speedy one. Nor can I be unmindful of the kind help tendered me by all members of the Committee. But I must especially mention with gratitude that received from Professor SEYMOUR and Professor FOWLER, who looked over the manuscript of my General Introduction and offered useful criticism and correction ; from Professor WHITE, Professor WHEELER, and Mr. ROBINSON, who also made valuable suggestions at different stages ; and, above all, from Professor WRIGHT (assisted by Dr. CHASE), who acted in my stead while the book went through the press in America, and without whose labor and kindness the publication must have been indefinitely delayed.

All other acknowledgments will, I hope, be found in their due place in the book.

The difficulties with which I have had to contend have been rehearsed above, and I have thought it right and just that they should be known. Painful and distressing as these conditions were, they vanish from the horizon now that the work is done, and I look back upon the scenes of labor behind me with unmixed pleasure and with deep gratitude, — gratitude first to the American School at Athens which, in 1889, when for nearly ten years I had been occupied with official work here in England, should have given me such brilliant opportunities of research in Greece and of direct association with an institution of learning belonging to my native home ; gratitude to the University of Cambridge and to my own College here, in my adopted home, which allowed me to undertake work officially associated with another country, gave me the necessary leave of absence, and enabled me to retain the post in this University which I have now held continuously for twenty-two years. I venture to think that this example of international comity and generosity in the cause of science, of which I have been the immediate beneficiary, is not only a significant instance and result of the uniting power of science and learning, but is more directly an earnest of the confraternity of the two great English-speaking nations. That it should be in the cause of Hellenic culture that this international and fraternal spirit should manifest itself against the survival (if not revival) in our times of blind and savage international alienation and hatred sounds like the faint echo to the pledge of civilized humanity made in Athens more than two thousand years ago by Aeschylus in the *Eumenides*. That great drama seems to me to glorify, with all the consummate skill of artistic expression, the establishment of civilization and its laws, superseding the blind spirit of savagery, hatred, and revengeful fury. By the intercession of the great goddess of Wisdom is founded the Areopagus, the first court of law to embody the ideas of human justice ; the hounding Erinyes are converted into Eumenides ; by the persuasive and gladdening language of Reason, blending Truth and Beauty with Goodness, the vindictive Furies are tamed and are given a home in the centre of civilized life, violet-crowned Athens ; and, adopting the tuneful and joyous measure of Attic poetry, they sing : —

Δέξομαι Παλλάδος ξυνοικίαν.

CHARLES WALDSTEIN.

KING'S COLLEGE, CAMBRIDGE, *April* 30, 1902.





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## GENERAL INTRODUCTION





## GENERAL INTRODUCTION

By CHARLES WALDSTEIN

THE Argive Heraeum was one of the most important sanctuaries of ancient Hellas; indeed, its position in the life of the ancient Greeks, and more especially its relation to and illustration of the earliest history of the Hellenic people, make it appear to have been at one time the foremost sanctuary of Peloponnesus, perhaps of the whole of Greece.

Archaeologically, too, the Heraeum holds a unique position in regard to the early history of Greece, and the finds made on this site have in consequence a special importance. For while similar objects have been found at Hissarlik, on the Islands, at Tiryns, and Mycenae, their relation to the place in which they were found does not give them the same significance as pertains to the objects from the Heraeum. For the Heraeum lay not only in Greece proper, but was the centre of the earliest Greek life as such, — which cannot be said for Hissarlik or even for the Islands; while the continuity of its history transfers the element of continuity to the objects there found, — and this cannot be said for Tiryns or Mycenae, each of which represents definite and distinct periods only.

To write a complete history of this sanctuary would be to write the history of the Argolic plain.<sup>1</sup> For while Tiryns, Mycenae, and Argos, in turn, had political preëminence in this district, the Heraeum always remained the chief religious centre. And as these three cities, in the early ages, were the most important political centres of Hellenic civilization, the history of the Heraeum is an important part of the history of Greece.

Whenever these three political centres — Tiryns, Mycenae, and Argos — were distinct and separate states, they clashed and struggled for preëminence. In the earliest days, indeed (according to tradition the days of Phoroneus and his successors down to Abas), there was unity of dominion over the "Argive" land; but, as we shall see, the subdivision began under the sons of Abas; and from this time on, until the final supremacy

<sup>1</sup> A clear definition of the name Argolis was not given to the land before Roman times; though Argos, with all the confusing vacillation in the use of this term to which I shall recur, certainly designated the same district in the earliest period. It comprised three districts: (1) the eastern peninsula, Acte, (2) the northern slopes from the mountains to the Gulf of Corinth, and (3) the southern slope from these mountains down to the gulf of Nauplia. The third portion is Argolis proper. The plain, bounded by the Arachnaean range on the east and the mountains of Artemisium on the west, — which converge at the northern end, while to the south the plain opens out to the gulf, — was called Argos in the earliest prehistoric time, and is the district to which we shall specifically apply the term Argive. The original meaning of the word *Ἄργος* must have been lost to the later Greeks, so that Stephanus Byzantinus explains it as *σχεδὸν πᾶν πεδῖον κατὰ θάλασσαν*. But this meaning is too restricted, as is

evident from the existence of the Orestian Argos in the interior of Macedonia, the Pelasgian in Thessaly, and the modern survival of the term to designate small plains surrounded by mountains in the interior of several islands. (Cf. Kiepert, *Lehrbuch der Alten Geographie*, p. 271.) This Argive plain is of light chalk soil, has much less rainfall than the western coast of Peloponnesus, and is thus subjected to drought (*πολυδίψιον Ἄργος*). The mountain streams run dry in the summer; but in the rainy season all combine to swell the Inachus. To sink wells is therefore of great importance in the present day and was so in the earliest times, as is evident from the myths of the Danaides. Danaus (explained as *ξηρός* by the grammarians) is the inventor of the art of digging wells, and as Archegetes of the Danaans, the inhabitants of the plain, is himself a representative of the plain. Through this artificial irrigation by means of wells, the plain was and is fertile in corn and pasture, *πολύκρονον, ἐκτέβρον Ἄργος*.



of the city of Argos, there was rivalry between the several cities. But through all periods the one point of union in the Argolid amid all the elements of rivalry and disruption, even when the ties of blood and common descent were of no cohesive efficiency, was this central sanctuary, which represented at once the oldest as well as the most continuously ruling religious cult in the district,—the worship of Hera. Apparently only during one short period was the worship of Hera superseded by another in the city of Argos, namely, when the Dorian supremacy was established and when the cities which fell to the “lot of Temenus” formed a kind of confederacy under the direction of Argos,<sup>1</sup> with the sanctuary of Apollo Pythaeus, at the foot of the Larisa of Argos, as the centre. The Argives maintained that theirs was the oldest sanctuary of Apollo Pythaeus;<sup>2</sup> even in later times the Argives collected contributions for this sanctuary,<sup>3</sup> and made it the repository of treaties.<sup>4</sup> But the supreme importance which the Heraeum had for the city of Argos<sup>5</sup> from the earliest to the latest times is amply proved, among other evidence, by the fact that the Argives always reckoned their time by the years of office of the priestesses of Hera, and that these chronological tables were used also elsewhere in Greece.<sup>6</sup>

The cult of Hera at our Heraeum was thus the principal worship of the city of Argos, and before the preëminence of the city of Argos in the Argive district, the Heraeum was the chief sanctuary of Mycenae. As Strabo puts it,<sup>7</sup> it was the sanctuary used in common by both these cities.

Not only was Hera the earliest divinity for the peoples which dwelt in the Argive plain, but the Argive Heraeum presented the earliest form of this divinity and her worship in ancient Hellas.

In Homer, Hera is called Ἀργεΐη.<sup>8</sup> In the Iliad (iv. 51), Argos, Sparta, and Mycenae are her favorite cities. The oldest of the sanctuaries of Hera mentioned at Sparta is evidently<sup>9</sup> that of Ἡρα Ἀργεία, said to be “founded by Eurydice, daughter of Lacedaemon and wife of Acrisius, the son of Abas.” Thus not only the attribute “Argive,” but also the tradition of its original dedication, through the Argive kings Acrisius and Abas, immediately point to its Argive derivation.

No doubt in this use of the term Ἀργος and the attribute Ἀργεΐη, the ancient Argive district, including, both geographically and historically, Tiryns and Mycenae, is meant, and not the city of Argos.<sup>10</sup> The city of Argos itself had four — possibly six — separate sanctuaries of Hera,<sup>11</sup> each with a separate cult. Still, as we have seen, our Heraeum remained its chief sanctuary, as it was the oldest.

<sup>1</sup> Herod. I. 82 ; Strabo VIII. 3. 33.

<sup>2</sup> Paus. II. 35. 2 (Telesilla, *Fragm.* 3).

<sup>3</sup> Thucyd. V. 53 and Diod. XII. 78. 1. Le Bas, *Inscr. rec. à Argos*, No. 8.

<sup>4</sup> Thucyd. V. 47. 13.

<sup>5</sup> It looks also as if at one time the Poseidon cult endangered Hera's supremacy, which may be inferred from the legend (which probably has some foundation in the earliest ethnological history of the land) related by Pausanias (II. 15. 5, 22. 4 ; cf. also Plut. *Q. Conv.* xi. 6). Compare the similar struggle between Athena and Poseidon at Athens. The division of national patronage between her and Zeus Nemeios (Paus. IV. 27. 6) is evidently of later origin and naturally arises out of the *ιερός* γένος and its special cult.

<sup>6</sup> Thuc. II. 2, IV. 133. For references to Hellanicus

of Mytilene, his *Ἱερεῖαι* as well as the *Atthis* and *Persica*, see Busolt, *Gr. Geschichte*, I. pp. 151 ff.

<sup>7</sup> τότε Ἀργος καὶ τὰς Μυκήνας, καὶ τὸ Ἡραῖον εἶναι κοινὸν ἱερὸν τὸ πρὸς ταῖς Μυκήναις ἀμφόιν. Strabo VIII. 6. 10.

<sup>8</sup> Hom. *Il.* v. 908 ; cf. Hesiod, *Theog.* 12 ; Aesch. *Suppl.* 299. Pind. *Nem.* x. 2, certainly refers to the Heraeum when he says Ἀργος Ἡρας δῶμα θεοπρεπές. Cf. also Eurip. *Tro.* 23, *Herac.* 349.

<sup>9</sup> Paus. III. 13. 8. The temple mentioned by Pausanias (III. 11. 9) as in the market-place, which she apparently held in conjunction with Apollo, as well as that of Hera Aphrodite (which may be the same as the Argeia) and Hera Aigophagos (III. 13. 8 and III. 15. 9) are evidently later.

<sup>10</sup> See NOTE A.

<sup>11</sup> Cf. Roscher in Roscher's *Lexicon d. Gr. and Röm. Mythologie*, I. pp. 2075 ff.



There can hardly be a doubt that all the other cults of Hera, such as those of Samos, Corinth, Olympia, Attica, Boeotia, Euboea, those in Thrace, on Lesbos, and many other islands of the Aegean, as well as the important cults of Sicily and Magna Graecia, e. g. at Croton and on Eryx, are all directly derived from the Argive cult.<sup>1</sup> The most important of all these other cults, after that of the Heraeum (in later times perhaps surpassing this in splendor), was the famous sanctuary on Samos. But all the evidence goes to show that this Samian cult was derived and imported from Argos. Tradition had it<sup>2</sup> that the Samian temple was founded by the Argonauts, who brought their sacred image with them from Argos. The Samians, of course, maintained that Hera was born on their island, on the banks of the Imbrasus or Parthenius,<sup>3</sup> under a willow (λύγος), which was preserved in the Samian Heraeum in the times of Pausanias. But the development of the Epidaurian myths concerning the birth of Asclepius, a divinity evidently imported from the north, and many similar instances in ancient mythology, show too well the prevailing tendency to make a divinity and a cult autochthonous, to allow us to attach much weight to an isolated tradition. Moreover, this tradition may have arisen merely out of a confusion of the traditions grouping round the λύγος, itself again a survival of a still more ancient rite of which the original meaning was lost. According to Menodotus of Samos<sup>4</sup> the Samian Heraeum is an Argive foundation by Admete, daughter of Eurystheus. We stand on much firmer historical ground when we hear that the first human-shaped (ἀνδριαντοειδής) image of Hera was introduced into Samos from the Argolid (Epidaurus) ἐπὶ Προκλέους ἄρχοντος,<sup>5</sup> i. e. about the time of the Ionian migration. At all events, the change from the *board* to the *image* assigned by Clement to the immigration of Procles seems to me to imply the importation by him of the cult of his house. These traditions, all of which indicate the dependence of the Samian on the Argive Heraeum, while this dependence is reversed in none, establish the primacy of our sanctuary and cult.

The nature and evolution of the Argive Hera and her worship is a question of great complexity, and would demand an elaborate exposition.<sup>6</sup> In studying carefully all the indications in ancient authors concerning this divinity, the customs and rites of her worship, and the archaeological evidence concerning her sanctuaries, we see that long before she had been defined by the Homeric "theology" in the Olympian circle of divinities as the spouse of Zeus, she was the supreme goddess of an earlier people, or of earlier peoples. Whether we call the people who originally worshiped her as Ἥρα Πελασγίς,<sup>7</sup> Pelasgians, or by any other name, this fact remains: that all the

<sup>1</sup> Cf. O. Müller, *Dorier*, I. 396.

<sup>2</sup> Paus. VII. 4. 4.

<sup>3</sup> *Schol.* Apoll. Rhod. I. 187; Appuleius, *Met.* 6. 4.

<sup>4</sup> *Ap.* Athen. XV. 672 a-e.

<sup>5</sup> Clem. Alex. *Protr.* IV. 46. See infra the evidence furnished by the terra-cottas found in our excavations.

<sup>6</sup> Most of the passages relating to Hera and the cult of Hera will be found in Roscher's able monograph on *Juno und Hera*, 1875, and his article in Roscher's *Lexicon*, as well as an account of the literature which deals with the subject. His work, however, seems somewhat vitiated by his tendency to consider Hera above all as a "moon-goddess," which, so far as her primitive nature is concerned, is untenable. I would also make special mention of two older monographs which enumerate the greater part of the literature on the subject of her cult, namely, R. Förster's

*Die Hochzeit des Zeus und der Hera* (Breslau, 1867), and *Ueber die ältesten Herabilder* (1868). Of course for her cultus, Iwan Müller's *Handbuch* (vol. v. part 3) on *Gr. Sakralalterthümer*, by Stengel, A. Mommsen's *Heortologie* and *Feste Athens*, and the older works, K. Fr. Hermann's *Gottesdienstl. Alterthümer*, and Schomann's *Gr. Alterth.*, are important. In the Argonautic tales Jason is also founder of temples of Hera: Strabo VI. 1. 1; Paus. VII. 4. 4.

<sup>7</sup> I leave it to my friends, Professor Ridgeway and Mr. J. G. Frazer, to enlarge upon the ethnological significance of this female deity, as well as to explain further the interesting features in the Samian rites, the *λεπὸς γάμος*, by means of the excellent methods of comparative mythology which Mr. Frazer has applied to good purpose.



indications seen in a careful study of the material now before us point to Hera among these early peoples, not as the spouse of the supreme King, but as herself the Queen,<sup>1</sup> though she may have had her consort. Had these peoples dwelling in the Argolic plain remained in supreme and unbroken possession of the land, and retained the sway over it, and had Argolis maintained its hegemony over the Greek peoples in historic times, the Heraeum might have become the Olympia of Hellas, and would have brought the Greek peoples together in the highest form of national federation, as in the oldest Greek colonies the cultus of the Lacinian Hera at the promontory near Croton brought all the Greek communities of Magna Graecia together at her festival.<sup>2</sup> We might then have had a Panhellenic Hera as the presiding Hellenic divinity; and Zeus might possibly have found his place as Consort to the Queen of the gods.

Of this primitive divinity we can single out several clear characteristics, some of which the subsequent adaptation to the prevailing theology accentuated or repressed.

That Hera was, as we have said, the chief divinity of the peoples who dwelt in the Argolic plain, and of those who were derived from them, is evident from the simple fact that her worship remained supreme in this region through all times. She is then the chief guardian of the city and the citadel, and from this conception must be derived the epithet Aeria, which maintained itself at Argos<sup>3</sup> and places which derive their cult from Argolis.<sup>4</sup> For as the selection and fortification of such a citadel was one of the first acts of a community which had come to occupy fixed habitations, so the consecration to the national divinity would be a necessary consequence. There can be but little doubt that Tiryns and Midea had a worship of Hera on their citadels; though the importance of these cities and, in consequence, of the worship on their citadels was destroyed at a comparatively early date.

Thus we may suppose that the Argive Hera guarded the land and the life and prosperity and presided over the occupations of the people who spread about the foot of this fortified stronghold. The dwellers in the *ἰππόβοτον* and *πολύπυρον* Argive plain clearly led a pastoral and agricultural life. The name Euboea<sup>5</sup> given to the hillock upon which the Heraeum stood clearly points to it as a favorable site for the grazing of cattle, and the intimate connection with the cow, the sacred herds at the temple,<sup>6</sup> the position of the white cows in her rites,<sup>7</sup> and perhaps the immediate relation of the *βοῶπις* goddess herself to the cow into which she is once changed and with which the myth of Io is so curiously connected, and finally the transplanting of these associations into the Hera-cult of other districts, — all this clearly indicates the original life of the early

<sup>1</sup> C. I. A. 172 κλειδοῦχος βασιληίδος Ἥρας. Cf. Pind. *Nem.* i. 59 (39); *Hom. Hymn.* xii. 1 seq.; Nonnus, *Dionys.* viii. 207; Kaibel, *Epig.* 268. 3; 822 a, 7; Kinkel, *Epic. Graec. Fragg.* p. 211.

<sup>2</sup> Aristot. *Mirab.* 96; Strab. VI. 1. 11 (Kramer); Dion. Perieg. 371.

<sup>3</sup> Paus. II. 24. 1; Hesych. s. v. ἀκρία. Cf. Panofka, 'Die Gottheiten auf Larissa, der Hochburg von Argos,' *Abh. d. Berl. Akad.* 1854, pp. 552–554. It is a noteworthy fact that the district of the Heraeum was divided into Euboea, Aeraea, and Prosymna; Paus. II. 17.

<sup>4</sup> Among these the most important is the one on the Acropolis of Corinth (Apollod. I. 9. 28; Eurip. *Med.* 1379; Musaeus *ap. Schol. Eur. Med.* 10; Didymus and Creophylus *ap. Schol. Eur. Med.* 273. Another very ancient sanctuary of Hera Aeraea lay between Lechaem and Pagae, probably the same as the one mentioned in Strabo

(VIII. 6. 22), which was an ancient oracle, and thus points to a primitive goddess of the land. Liv. XXXII. 33; Xen. *Hell.* IV. 5. 5. Cf. Bouché-Leclercq, *Hist. de la divination dans l'Antiq.* II. pp. 395 f.

<sup>5</sup> Paus. II. 17. 1. The whole island of Euboea was sacred to Hera (Apoll. Rhod. iv. 1138), and here, too, the *ἑρὸς γάμος* takes an important place. She is especially associated with the mountains Oches and Dirphys. It is also worthy of note that similar importance is given to her, and similar rites are found in Boeotia, especially on the Cithaeron (Eurip. *Phoen.* 24). Cf. Cephal. *ap. Malal.* p. 45, and *Schol.* to 24 as well as 1760. Cf. also Plut. *ap. Euseb. Pr. Ev.* III. 83; Paus. IX. 2, 7; III. 1–9.

<sup>6</sup> Arg. Pind. *Nem.* iii. p. 425 (Boeckh); Palaeph. 51; Herod. I. 31.

<sup>7</sup> Sem. *Agam.* 354.



FIG. 1. — MAP OF THE REGION ABOUT THE HERAEUM.

Enlarged from Steffen's *Karten von Mykenai* (Argolis), with additions. Heights in metres. The rectangle incloses an enlarged section of the Heraeum Site as indicated on the Map (see Fig. 2).



Hera-worshippers in the Argive plain. Perhaps also the fact that sacred horses were kept at Argos for Hera points to the same conclusion.<sup>1</sup> As to Hera as the protectress of vegetation, the epithet Ἀνθεία<sup>2</sup> and the ceremonies connected with this aspect of the divinity, as well as the survivals of ceremonies connected with the hiding of the image under the λύγος at Samos and various customs in the ἱερὸς γάμος — all make her out as a goddess of vegetation and vernal power.

But besides presiding over the land and the occupation of its inhabitants, Hera guarded and regulated the social and domestic life of her people. By itself the fact that the chief divinity of these early peoples was a goddess indicates that the woman and the mother may have held a dominant position in the family and tribal history of these communities, and, in the beautiful story of Cleobis and Biton, and the filial piety which it illustrates, we may see, perhaps, a survival of the supreme position occupied by the mother in Argive tradition. In the ἱερὸς γάμος or sacred marriage, which formed a central feature of the great festival of Hera at Argos and elsewhere,<sup>3</sup> her relation to Zeus appears to reflect a change of classification in Greek theology in the process of organization to which subsequent ages led, as well as corresponding social changes in the domestic and tribal life of the Greek nation; but that side of Hera which makes her preside over the domestic and family life, as the guardian of women and of marriage, always remains prominent.

The ceremonies in connection with this ἱερὸς γάμος<sup>4</sup> were reproductions of the actual marriage ceremonies of ancient Greece, in which probably some of the forgotten customs of a ruder nature-worship of agricultural peoples survived. No doubt the young affianced couples made dedications at this temple (and hence may have come many of the votive offerings found in our excavations), as the affianced girl visited the temple and performed certain functions before the wedding. Hera was thus also the protectress of maidens.<sup>5</sup> But it was chiefly to the mother, the child-bearing mother, that Hera extended her helpful protection; and this she does as Hera Eileithyia. There is but little doubt in my mind that, as in the relation of Nike to Athene, so here Eileithyia was Hera in one of her functions, and only later developed into a separate divinity. Most of her temples in other parts of Greece and those of Juno in Italy were centres of a worship where the goddess responded to the prayers and offerings of the women who required such help; and thus the Heraeum of Argos, with its baths, formed a kind of special sanitarium for women in their troubles.<sup>6</sup>

Besides the ceremonies connected with the ἱερὸς γάμος at the Heraeum, there was a great public offering of cows, of which perhaps even one hundred were offered up at the chief festival, and those cattle were probably taken from the temple-herds sacred to Hera.<sup>7</sup> The feast was thus called ἐκατόμβαια.<sup>8</sup>

<sup>1</sup> Diodor. IV. 15.

<sup>2</sup> Paus. II. 22. 1; cf. Pollux IV. 78, Cometas *Anthol. Gr.* ix. 586.

<sup>3</sup> Hermione, Attica, Boeotia, Cithaeron (the Daidala), Euboea, Samos, Lesbos, Cyme, Cnossus, etc.

<sup>4</sup> For the numerous passages on this subject we can best refer to R. Förster, *Die Hochzeit des Zeus und der Hera*, cited above, and Roscher, *Lex.* I. pp. 298 ff.

<sup>5</sup> A very curious and significant feature of the myth is that she herself, after bathing in the fountain Canathus at Nauplia every year, became a virgin (Paus. II. 38. 2; *Schol.* Pind. *Ol.* vi. 149), and that as Παρθένος she protects maidens.

<sup>6</sup> Cf. what I have said in the preliminary publication (*Excavations of the American School of Athens at the Heraion of Argos*, 1892), p. 20, and note the terra-cotta, Pl. viii. No. 19, as well as No. 8, which corresponds to another holding the bow as an attribute of Hera Eileithyia — the latter dating from about B. C. 500.

<sup>7</sup> Pind. *Nem.* x. 22, Βουθυρίαν Ἡρας; Parthen. *Narr.* 13; Eurip. *Electr.* 172 seq.; Sen. *Agam.* 364.

<sup>8</sup> *C. I. G.* 1515 a, 1. 10, b, 1. 8, 1715; *Schol.* Pind. *Ol.* vii. 152; cf. also the customs at the Olympian Heraeum and the prize of olive wreath and part of the victim sacrificed to the maiden runners (Paus. V. 16 and 17).





FIG. 2. — GENERAL PLAN OF THE SITE : ACTUAL STATE AFTER EXCAVATION.

I. Old Temple ; II. North Stoa ; III. Northeast Stoa ; IV. East Building ; V. Second Temple ; VI. South Stoa ; VII. West Building ; VIII. Northwest Building ; IX. Roman Building ; X. Lower Stoa ; XI. Modern Phylakion. A, B, C, D, E, F, Cisterns.



Another great feature of the chief festival at the Argive Heraeum were the games, which, from the nature of the prizes offered, were called ἀσπὶς ἐν Ἀργεῖ or ἐξ Ἀργους ἀσπὶς<sup>1</sup> or χαλκῆος ἀγών,<sup>2</sup> a name sometimes given to the whole festival. The prize to the victors in these contests consisted of a bronze shield or some other object in bronze and a myrtle wreath.<sup>3</sup> This may in part account for the numerous objects in bronze found on this site during our excavations.<sup>4</sup> The games were supposed to have been founded by Lynceus or Archinus,<sup>5</sup> and in historical times took place in the stadium of Argos.<sup>6</sup> Then followed a great πομπή<sup>7</sup> or procession in which were armed youths, maidens, etc., reminding us of the main features of the Panathenaic procession. In the times of the supremacy of the city of Argos this procession probably traversed the whole distance from the stadium of Argos to the Heraeum, a feature which no doubt was introduced when the chief care of the Heraeum was transferred to Argos from Tiryns and Mycenae.

#### TOPOGRAPHY.

To appreciate the historical relation which the Heraeum bore to the three great centres of early Greek history in the Argolid we must consider the topography of the temple precinct (Figs. 1-4).<sup>8</sup>

Pausanias<sup>9</sup> tells us that the Heraeum is fifteen stadia from Mycenae. Strabo,<sup>10</sup> on the other hand, says that the Heraeum was forty stadia from Argos and ten from Mycenae. Both authors underestimate the distance from Mycenae, which is about twenty-five stadia, or a little more than three miles; while the distance from Argos is forty-five stadia, or a little more than five miles. The distance from the Heraeum to the site of the ancient Midea is slightly greater than to Mycenae, while that from the Heraeum to Tiryns is about six miles, i. e. slightly greater than to Argos.

Were we to judge merely from actual distance, the Heraeum would thus be most closely associated with Mycenae. We must, moreover, note that both Pausanias and Strabo appear to associate the Heraeum only with Mycenae and Argos. The closer association with Mycenae implied in the notice of Pausanias is to be ascribed simply to the fact that his journey naturally took him from Mycenae to the Heraeum. Strabo, on the other hand, makes Argos his centre; and while he recognizes the priority of Mycenae in the

<sup>1</sup> C. I. G. 234; 1068.

<sup>2</sup> Pind. *Nem.* x. 22; Hesych. s. v.

<sup>3</sup> Kaibel, *Epigr.* 846.

<sup>4</sup> An epigram on the base of a statue erected to King Nicocreon of Cyprus mentions as the cause of erecting the statue the sending by him of bronze Ἡραὶ ὅν ἐῖς ἔροτιν πέμπο[ν] ἅε]θλα νέοις, Le Bas-Foucart, *Pélop.* 122; Roscher, *Lex.* I. p. 2077.

<sup>5</sup> Hyg. *Fab.* 275, 170; *Schol.* Pind. *Ol.* vii. 152.

<sup>6</sup> Paus. II. 24. 2.

<sup>7</sup> Aen. *Tact.* 1. 17, Eurip. *El.* 172; Dion. Hal. I. 21.

<sup>8</sup> The chief passages in ancient authors on this subject are Pausan. II. 15 ff., and Strabo VIII. 6.

The chief modern books on the topography are these: Steffen, *Karten von Mykenai*, Berlin, 1884, and pp. 39-42; Bursian, *Geographie von Griechenland*, II. pp. 47 seq. with map of the Heraeum (Tapei); W. Vischer, *Erinnerungen und Eindrücke aus Griechenland*, pp. 316, 317, and the excellent short account in Frazer's *Pausanias*, III. pp. 165-181. For earlier books cf. Leake, *Peloponnesiaca*, pp. 258-

264; Mure's *Journal*, II. pp. 177-182; Curtius, *Der Peloponnes*, II. pp. 396-400, 569 ff.; W. G. Clark, *Peloponnesus*, pp. 81 ff.

<sup>9</sup> The passage in Pausanias, so far as it relates to the topography runs (II. 17. 1 and 2): Μυκηνῶν δὲ ἐν ἀριστερᾷ πέντε ἀπέχει καὶ δέκα στάδια τὸ Ἡραῖον. ρεῖ δὲ κατὰ τὴν ὁδὸν ὕδωρ Ἐλευθέριον καλούμενον· χρώνται δὲ αὐτῷ πρὸς καθάρσια αἱ περὶ τὸ ἱερὸν καὶ τῶν θυσιῶν ἐς τὰς ἀπορρήτους. αὐτὸ δὲ τὸ ἱερὸν ἐστὶν ἐν χαμαλωτέρῃ τῆς Εὐβοίας. τὸ γὰρ δὴ ὕρος τοῦτο ὀνομάζουσιν Εὐβοίαν, λέγοντες Ἀστερίωνι γενέσθαι τῷ ποταμῷ θυγατέρας Εὐβοίαν καὶ Πρόστυμναν καὶ Ἀκράϊαν, εἶναι δὲ τροφὸς τῆς Ἡρας· καὶ ἀπὸ Ἀκράϊας τὸ ὕρος καλοῦσι τὸ ἀπαντικρὺ τοῦ Ἡραίου, ἀπὸ δὲ Εὐβοίας ὅσον π.ρὶ τὸ ἱερὸν, Πρόστυμναν δὲ τὴν ὑπὸ τὸ Ἡραῖον χάραν. ὁ δὲ Ἀστερίων οὗτος βέων ὑπὲρ τὸ Ἡραῖον ἐς φάραγγα ἐσπίπτων ἀφανίζεται.

<sup>10</sup> The passages in Strabo are (VIII. 6. 2. 368): ἀπὸ δὲ τοῦ Ἀργους εἰς τὸ Ἡραῖον τεσσαράκοντα, ἔνθεν δὲ εἰς Μυκῆνας δέκα, and (VIII. 6. 10. 372) τό τε Ἀργος καὶ τὰς Μυκῆνας, καὶ τὸ Ἡραῖον εἶναι κοινὸν ἱερὸν τὸ πρὸς ταῖς Μυκῆναις ἀμφόιν, κ. τ. λ.

phrase τὸ πρὸς ταῖς Μυκῆναις, in other respects, when dealing with the history of these two centres of early history, he reverts to Argos as the historical protagonist and ignores the historical importance of Tiryns and Midea.

We can understand then (see NOTE A) why we find no mention in Strabo of the relation which the Heraeum holds to Tiryns. The importance of this remark will become



FIG. 3. — THE ARGIVE PLAIN WITH THE SECOND TEMPLE IN THE FOREGROUND.  
Argos and Larisa are at the upper right-hand corner, the Nauplian Gulf at the left.

clearer when we come to the history of the Heraeum and consider the archaeological evidence which the excavations have yielded. But it is well to say at once, what will require and receive fuller confirmation as we proceed, that three main periods are distinguishable in the history of the Heraeum: the first, the period of its construction, and its connection with Tiryns; the second, the Mycenaean period; and the third, that in which the Heraeum is directly under the influence of the city of Argos.

Though nearer in space to Mycenae and to Argos than to Tiryns and Midea, the Heraeum is not so as regards natural connections. It is most improbable that the site of the Heraeum would have been chosen as that of the sanctuary by the inhabitants of either Mycenae or the city of Argos. For, as regards Mycenae, far up in a mountainous corner at the northeast extremity of the Argive plain, it is not visible from the Heraeum, nor could the Mycenaeans see their sanctuary from their citadel. And as regards the city of Argos, the Heraeum is separated from it by the Inachus, which is at times unfordable, and the two have, in so far, no immediate connection. The Inachus divides the plain into halves, and, as we shall see, this division is recognized by the early traditions of the Argive region. The district on the western bank is well defined, and completely commanded by the heights which terminate in the Larisa or citadel of the city of Argos, jutting out into the centre of this part of the plain. The wider eastern



half occupies the greater part, and while it directly overlooks the sea, the best means of protecting the plain were found in the fortresses built on elevations somewhat farther inland, namely, at Tiryns and Midea. Furthermore, the marshy nature of the soil close by the sea naturally led the inhabitants in the northerly direction inland. We thus have a well-defined broad plain, bounded on the south by the sea, on the west by the Inachus, on the east and north by the Arachnaean group of hills, and on the north by the Euboean group. This northern hill projects, moreover, in a southerly direction into the plain in a similar manner to that in which the Lycone-Larisa hills project in an easterly direction into the western portion of the Argive plain. The Heraeum is thus the fittest northern ending to the district commanded by Tiryns and Midea, and is really most accessible from Tiryns, as the plain is comparatively level from the foot of Euboea to Tiryns itself. Mycenae behind its hills is a kind of "after-thought," built in this northernmost corner for special reasons of inland defense, and the earliest traditions, as we shall see, when subdividing the regions of the Argive country, do not know even



FIG. 4. — ARGIVE PLAIN WITH EXCAVATED REMAINS OF THE OLD TEMPLE IN THE FOREGROUND.  
Argos and Larisa are near the upper left-hand corner.

its name. But as the visitor approached from the south, the sanctuary of the Heraeum in its commanding position could be seen from every point. And as the visitor stands upon its platforms, the most entrancing survey of the whole plain lies before him (see NOTE B).

According to Pausanias the Heraeum stood "on one of the lower slopes of Euboea." The term Euboea did not designate the eminence upon which the Heraeum is placed, or



FIG. 5. — VIEW OF MOUNT EUBOEIA, WITH SOUTH STOA IN THE FOREGROUND.

The foundations of the Second Temple rise above the South Stoa, and above these the Cyclopean supporting wall of the Old Temple.

only the mountain-top behind the Heraeum; but, as Pausanias distinctly indicates, the group of foothills and the hilly district adjoining the mountain. When once we admit that Euboea designated not only the hill immediately behind (to the northeast of) the Heraeum (Fig. 5) which is 532 metres high, but also the hilly district adjoining it, the general scale of distance on which we identify the sites mentioned by Pausanias must grow larger. He divides the territory of the Heraeum<sup>1</sup> into three parts, viz., Euboea, Acraea, and Prosymna. Two of these (Euboea and Acraea) are manifestly mountainous districts; the other designates the plain. We should thus follow Steffen in his identification of Euboea (see Fig. 1), which, even among the modern inhabitants, has the name of Evvia, while we should see Acraea, lying "opposite the Heraeum," opposite Euboea to the east, in the mountain now called Elias Berbatiotikos. While it is difficult to define the extent of each hill-country, it is still more difficult to fix the bounds of the low-lying land Prosymna, which Pausanias defines as "the district below the Heraeum." I am inclined to believe that this part of the "sacred domain," which, though below the hill-land of the Heraeum, was, relatively to the plain, nearer Tiryns and the banks of the Inachus, "lofty and green" as Statius calls it,<sup>2</sup> was of considerable extent. The passages in Strabo<sup>3</sup> (ταύτη [Μιδέα] δ' ὁμορος Πρόσυμνα) and Stephanus of Byzantium

<sup>1</sup> The land belonging to the sanctuary, the glebe land, must have extended far beyond the *τέμενος* itself, as is already suggested by the fact that from the sacred herds probably one hundred head were sacrificed at the festival alone. In the passages quoted below from Statius, the poet is clearly speaking of large and wide tracts and subdivisions of points on the whole Argive plain: Larisa, Lerna, Prosymna, Midea, — and thus evidently implies a large

tract of grazing land under Prosymna. So too in the passage quoted from Stephanus Byz., his definition of *προσυμναῖος* as *δ' οἰκήτωρ*, shows that a habitable district is meant. Cf. the curious epithet *προσύμνη* of Demeter at Lerna. Paus. II. 37. 1.

<sup>2</sup> *Theb.* i. 383; iii. 325; iv. 44.

<sup>3</sup> VIII. 6. 11. 373.



(Πρόσυμνα, μοῖρα τοῦ Ἄργους)<sup>1</sup> might lead one to believe that it bordered to the south on the territory of Midea, and to the west on the territory of the city of Argos. It would thus perhaps have included the site of such modern villages as Chónica, Anyphí, and Pasiá. But it is uncertain whether we have any right to include the passage from Strabo as applying to the Prosymna of our Heraeum. The passage in Strabo, as it now stands, tells us that Prosymna was near Midea, and also contained a temple of Hera.<sup>2</sup> And though the coins of Midea have on the reverse a head of Hera Argeia,<sup>3</sup> and that place possibly may have had a small Hera temple of its own, it would be a curious coincidence if it also had a district bordering on the Heraeum to which the same name was given as to that of the adjoining Heraeum territory; still, the Greek of the passage in Strabo, which, moreover, mentions the *ιερόν* (and he has been speaking of the Heraeum but a page before this) without the article, points to a separate temple and a separate Prosymna. In the time of Stephanus, we must remember (see above) that the term Argos might well have been used to include the great sanctuary of that city, namely, the Heraeum.

Pausanias begins his description of the Heraeum by telling us that "beside the road flows a water which is called the Water of Freedom (Eleutherion)." And he subsequently informs us that "the Asterion [he calls it a river, ποταμός, a few lines before]



FIG. 6. — SITE OF HERAEUM FROM THE EAST.

The East Revma in the immediate foreground; beyond it the three terraces: the Old Temple, the Second Temple, and the South Stoa.

flowing above the Heraeum falls into a gully and disappears." Early travelers and topographers like Mure,<sup>4</sup> whose whole scale of identification was smaller, saw the Asterion in the Glykia stream which descends from the mountain behind the Heraeum, and loses itself in the gully or Revma to the southeast of the temple rock; while the Eleutherion would be the present Revma-tou-Kastrou bordering the rock on the northeast. This view was held also by us when we began our work at the Heraeum.<sup>5</sup> But Captain Steffen's<sup>6</sup> convincing arguments in favor of his new identification of this river have

<sup>1</sup> Steph. Byz. s. v. πρόσυμνα.

<sup>2</sup> Speaking of Midea he continues: ταύτη δ' ὁμορος Πρόσυμνα [καὶ] αὕτη ἱερόν ἔχουσα Ἡρας. Unfortunately there are nine or ten letters missing in one MS. between προσυ and αὕτη. Kramer's note says: sed *μνα* modo sec. m. restituit: inde καὶ om. *cgh*. Videtur autem scriptum fuisse Πρόσυμνά ἐστι, καὶ αὕτη κ. τ. λ. — καὶ — Ἡρας om. B (sed sec. m. in marg. add.) *l*. Whatever is done, the

αὕτη, and the omission of the article before ἱερόν, point to a second temple.

<sup>3</sup> Head, *Historia Numor.* p. 370.

<sup>4</sup> *Journal*, II. p. 180.

<sup>5</sup> Cf. C. L. Brownson, *Amer. Journ. Arch.* VIII. (1893), p. 206.

<sup>6</sup> *L. c.* pp. 40 ff.

commanded acceptance. He identifies the Asterion with "the river which rises among the mountains to the northeast of Mycenae, flows down to the eastern flanks of the Prophet Elias mountain and Euboea, and then, after traversing the narrow glen of the Klisura, enters the Argolic plain about two and a half miles to the southeast of the Heraeum. Many small tributaries descend to it from the slopes of Mount Euboea and Acraea, the two mountains which were mythically represented as the daughters of the river. Pausanias's statement that the Asterion disappeared in a gully applies well to the river in question, the water of which, about a quarter of a mile south of its entrance



FIG. 7. — SITE OF THE HERAEUM FROM THE SOUTHWEST.

The Revma-tou-Kastrou in immediate foreground ; beyond, the succession of terraces. The corner of the Southwest Stoa shows in the foreground ; above it, in the middle, the West Building.

into the narrow Klisura glen, vanishes wholly among the shingle and boulders of its rugged bed."<sup>1</sup> So soon as we interpret Euboea, Acraea, and Prosymna as larger heights and districts, and not merely as the immediate border-lines of the temple itself, and remember that Asterion was considered the father of the three localities personified, we cannot identify him with the small Glykia stream (smaller than the one on the northwest), but must seek him in one of the larger rivers of the whole Argive district. When Pausanias, moreover, mentions Inachus, Cephisus, and Asterion as the arbitrators in the legend of the strife between Poseidon and Hera,<sup>2</sup> this river must be on a scale with the other two. (Cf. Figs. 6, 7.)

The same claim for size does not hold good for the Eleutherion. Pausanias at once indicates the difference in speaking of the Asterion as ποταμός, while the other, Eleutherion, he calls ὕδωρ. We must first examine the passage itself, as given by Pausanias,<sup>3</sup> and see how it defines the exact position and the nature of the Eleutherion. A good deal will depend upon how we translate the phrase κατὰ τὴν ὁδόν. As Pausanias has just left Mycenae, and speaks of the distance between it and the Heraeum, it is but natural that his next remark, in which he mentions the road, is made as if from the road. The usual translation of the phrase in question would be "beside or down by the road flows," etc. In this case the Eleutherion would be identified with the Revma-tou-Kastrou running round the northern side of the Heraeum, and immediately below its western peribolus towards the south of the plain.

<sup>1</sup> Frazer, *Pausanias*, vol. III. p. 181.

<sup>2</sup> Paus. II. 15. 5.

Paus. I. c.



Those who would look for the Eleutherion on the road to Mycenae at some distance from the Heraeum may well point to the phrase *αὐτὸ δὲ τὸ ἱερόν*, which immediately follows Pausanias's words on the Eleutherion, and which, marking this phrase as the opening of the description of the temple itself, implies that in the passage preceding it the writer is not yet supposed to have arrived at the sanctuary. Captain Steffen<sup>1</sup> thus supports the view, first expressed by Lolling, that the Eleutherion is to be found in a well which flows to the present day near the Panagia chapel, near the road which leads from Mycenae to the Heraeum, and about three quarters of a mile from the latter. He points out, further, that the form of the name (Eleutherion) is not suited to the designation of a stream. We at once raise the question, "Why, then, did Pausanias not use the term *κρήνη*, which was used for the Eleutherion drinking-fountain by Hesychius and Eustathius?"<sup>2</sup> The answer may be that he is here referring to baths, while the others refer to drinking-fountains; and that both baths and drinking-fountains were supplied by the water in the stream. But Steffen would answer this by maintaining the fact that the stream in question was dry for the greater part of the year, and thus would not yield water. On the other hand, the well near the Panagia chapel "on the road" is a branch of the stream which is fed by a basin from which the shepherds now take their water. This again is supplied by a well with fine old masonry, a little higher up, about which are grouped ruins of very ancient dwelling-houses. Steffen surmises that these dwellings belonged to the Heraeum and served for the attendants of the temple as well as for the freed slaves who drank from the well, of which the special name was Cynadra. In support of this view we might urge that during our excavations we were forced to get our supply of drinking-water from a distance, and, finding the water of this very Panagia well purer and cooler than that of the well in the village of Chónica, the continuous journeys of the donkeys with water-barrels along the Mycenae "road" formed one of the many picturesque scenes which lent a peculiar charm to our day's work. Furthermore, if in identifying the landmarks given by Pausanias, we arrange our topography on the large scale which we have adopted as regards Euboea, Acraea, Prosymna, and Asterion, then the Panagia well and stream, on the very slopes of Euboea, would come within the domain of the sanctuary, and would not appear too far removed from the temple.

But, on the other hand, we must recall the definite statement of Pausanias, — which, considering the paucity of his remarks on the great sanctuary, and the numerous remains and interesting works and records before him, throws this fact into the strongest relief, — "that the women who minister at the sanctuary employ it (the water of Eleutherion) for purifications and for secret sacrifices." Now it seems to me hard to believe, when we consider the integral part which this water played in the important, nay essential, functions of the temple, in the rites and ceremonies, by the very nature of the cult, that we must look for it over a hilly path three quarters of a mile from the sanctuary itself.<sup>3</sup> And this doubt is greatly confirmed — nay, becomes almost insurmountable — when we consider the elaborate system of water-works which our excavations have so clearly laid bare within the sanctuary itself, and which are manifestly in immediate relation to the Revma-tou-Kastrou. We have here not only cisterns and aqueducts, but also baths and drinking-fountains, and they form a marked feature of the whole site.

<sup>1</sup> *Op. cit.* pp. 41 and 42.

<sup>2</sup> See below, p. 18.

<sup>3</sup> Especially when I recall the impatience and irrita-

tion we often experienced at the delay of donkeys and chatting agoyats in bringing the water over this rough and hilly path from such a distance.



Indeed, I believe that the extensive early-Greek Southwest Stoa (the largest building on the site), the Roman house on the west, and the bath and well-house on the west side of the North Stoa, and perhaps also the West Building, were in more or less direct connection with these water-works, the ceremonies to which they ministered, and the character of quasi health-resort which the sanctuary must have had.

Cisterns are scattered about the sanctuary, all, however, in the direction of the bed of the stream. With the exception of the more open cistern marked A, to the west of the Old Temple, they are cave-like, or in the forms of rock-cut tombs.<sup>1</sup> Among these the cross-shaped one, mentioned by earlier travelers, below the West Building (VII) and the northeast end of the Lower Stoa (X), is closest to the actual temple buildings. Immediately beside this is the semicircular basin cut into the rock<sup>2</sup> in which a strigil was found, and which was probably a bath adjoining the cistern. Another rock-cut cistern running far into the hillside is below the northwest slope of the Heraeum hill towards the bed of the stream, and seems to have been fed by the overflow from the river. For although, as is the case even with the Inachus and most rivers of Greece, the bed of the stream is generally dry, after rains the stream swells to a very torrent and overflows its banks.<sup>3</sup> Still more clearly do we realize this intimate connection of the temple with the stream when we consider the underground cisterns, bath-like chambers cut into the rock, and rock-cut aqueducts, on the river bank about two hundred yards to the southwest of the temple, at which Mr. Brownson<sup>4</sup> and Mr. Fox excavated with untiring energy. Here, also, we find a subterranean conduit (Fig. 8) cut into the solid rock, with three "avenues leading, one toward the plain and town of Argos, the second back toward the temple, the third at right angles to the direction of the other two, or about southeast." The second and third lead back into the bed of the river, and were thus evidently feeders for the main channel of the waters in the stream. The first runs back, however, at least 13.70 m. towards the temple, and was followed by Mr. Brownson and Mr. Fox with their gang of "miners" for 34.70 m. in the direction of Argos. This hard work was not carried farther. Mr. Brownson suggests that this might have been connected with a system of irrigation for the plain. There is another possibility to which we shall return presently. Meanwhile I must at once remark that this rock-cut watercourse reminds us of that discovered by Dörpfeld at Athens in connection with the identification of the Enneacrunus, and I shall have to point to other resemblances between the waters of Eleutherion and those of Enneacru-



FIG. 8. — MAN-HOLE AND ROCK-CUT CONDUIT AT STREAM-BED OF REVMA-TOU-KASTROU.

<sup>1</sup> We at first considered them such. They were probably used as dwellings or churches in Byzantine times.

<sup>2</sup> K in Mr. Fox's plan of the excavations of 1892. See *Twelfth Annual Report of the Arch. Inst. of America*, 1894. See also Waldstein, *Excavations of the American School of*

*Athens at the Heraion of Argos*, 1892, p. 4; cf. also Brownson, *l. c.* pp. 210, 211.

<sup>3</sup> Cf. C. L. Brownson, *l. c.* p. 206.

<sup>4</sup> *L. c.* pp. 211 ff.



nus. Besides these water-works immediately connected with the stream, there was an elaborate well-house and bath with chambers on the southwest corner of the second platform, abutting on the North Stoa (II). Adjoining this well-house, which no doubt contained water for drinking and sacrificial purposes, we recognized a bath<sup>1</sup> in a flat, cemented square with a channel for the off-flow of water, found during the first year of our work. A channel of terra-cotta pipes ran from this well-house, between the north side of the Second Temple and the North Stoa towards the northeast end of the temple. It is probable that the sacred water was thus conducted to the east platform to be used in the sacrifices and ceremonies which took place before the temple.

Enough has been said to show how elaborate and important were these water-works within the temple precinct, and that they bear some immediate relation to the stream — these facts all being in favor of the identification of the latter with the Eleutherion mentioned by Pausanias. It is possible that the waters of the stream, stored in these cisterns, were fed also by some other watercourses belonging to its immediate system,<sup>2</sup> but the stream itself would be the centre and bear the name; and so this name could not be given to the Panagia well.

Mr. Frazer<sup>3</sup> strives to reconcile the two conflicting views by suggesting that possibly the waters from the Panagia well may have been conveyed in the rock-cut aqueduct to the temple. But even if the direction of our aqueducts did not contradict this, it would not solve the difficulty. For the name Eleutherion, if given to the water drunk at the Heraeum and led in the conduits by the stream-bed “which flows by the road,” would have to apply not to this transported water but to the stream itself, or to the distant well.<sup>4</sup>

The puzzling question is further complicated by the passages in Eustathius<sup>5</sup> and Hesychius,<sup>6</sup> according to whom this water of freedom came from a well called Cynadra at Argos, of which the slaves drank on being freed. Not much weight need be given to the term Argos as used loosely by these late writers. Still, if their evidence stands, it seems to me worth suggesting that the rock-hewn aqueduct discovered by us leading in the direction of Argos may have taken the sacred water from the sanctuary to the market-place of Argos, and have been there used in the ceremony of freeing slaves.

The water of Eleutherion was thus used primarily by the priestesses for the immediate ceremonies of their own cult, and secondarily in the ceremony of freeing slaves. It is worth considering for a moment whether there may not be some inner connection between these two uses.

This old lustral ceremony of the temple of Argive Hera reappears in other cults. At the temple of Artemis Triclaria at Patrae it is connected with the offering which took the place of human sacrifice and with the beautiful story of Comaetho and Melanippus.<sup>7</sup> There it is the river Amilichus, “the stream,” in the waters of which the children must

<sup>1</sup> See first *Report and Excavations*, l. c.

<sup>2</sup> I was told by some workmen that there was a *vrissi* and walled well in the gully immediately to the northwest of the Heraeum and belonging to this system, and once set out to hunt for it but without success. Owing to the multifarious and continuous tasks before me, necessarily connected with the work of directing such excavations, and to the impossibility of realizing at the time how important each smallest point may become, I did not sift this question to the bottom. I hope some member of the American School will some day again explore the whole

neighborhood. For a well there might be immediately connected with the stream — or perhaps there may have been one which is now dried up.

<sup>3</sup> *Pausanias*, vol. III. p. 181.

<sup>4</sup> See also Mr. Frazer's pertinent criticism (*Pausanias*, vol. III. p. 180) of Wilamowitz-Möllendorff's suggestions in *Hermes*, XIX. (1884), pp. 463–465.

<sup>5</sup> Eustathius, VIII. 408.

<sup>6</sup> Hesych. s. v.

<sup>7</sup> Paus. VII. 19–20, 2.



bathe. At Lebadea it is the river Hercyna<sup>1</sup> in whose waters he who wished to consult the oracle of Trophonius had to bathe, "while observing strict rules of purity and not bathing in warm water."<sup>2</sup> At the temple of the Cranæan Athena near Elatea the boy priest "acts as priest for five years, during which he lodges with the goddess and bathes in tubs after the ancient fashion."<sup>3</sup>

Now, all these ceremonies point to very ancient customs. At the Heraeum no doubt these were connected with the sacred and "secret sacrifices" of the *ἱερὸς γάμος*, the type of actual marriage ceremonies. It is well to remember the important part which the bath played in the wedding of the ancients.<sup>4</sup> For this special water was used.<sup>5</sup> The *λουτρὸν νυμφικόν* was taken at Athens from the well Callirrhoë, made over by Pisistratus into the Enneacrunus;<sup>6</sup> at Thebes the water was taken from the Ismenus;<sup>7</sup> at Troy from the Scamander.<sup>8</sup>

This lustral use of the water in connection with marriage would precede its use as a part of the ceremony of emancipation, which already presupposes a thoroughly developed and complicated civic organization; but we can understand that the Eleutherion water, when used for nuptial ceremonies at Argos, might be used also in the emancipation of slaves, and that "drinking the water of freedom" might become a proverbial phrase for being freed. Strange as it may appear to us, the act of marriage to the ancient Greek, especially to the Greek maiden, kept in the strict seclusion of her *παρθενών*, the step which made her *γαμετή* or even a *παλλακή*, was one of comparative freedom and emancipation.<sup>9</sup>

While the balance in the weight of evidence thus appears to us to incline towards the identification of the Revma-tou-Kastrou with the ancient Eleutherion, the arguments in favor of the Panagia well appear to us still to be very strong, and we can therefore not speak with anything approaching to certainty on this point of topography.



FIG. 9. — DRUM AND CAPITAL FROM SECOND TEMPLE, AS FOUND BEHIND THE SOUTH STOA.

<sup>1</sup> Paus. IX. 39, 2-7.

<sup>2</sup> It is perhaps worth noting that the older city of Lebadea "originally stood on high ground, and was named Midea," bearing the same name as the high ancient city in the Argive plain.

<sup>3</sup> Paus. X. 34, 8.

<sup>4</sup> I cannot enter here into the interesting question of the *λουτροφόρος*.

<sup>5</sup> Cf. Lasaulx, 'Zur Geschichte und Philos. der Ehe bei den Griechen,' *Abh. d. k. Bayr. Akad.* 1851, phil. cl. VII. Abth. 1, p. 73; cf. Becker, *Charikles*, III. p. 300.

<sup>6</sup> Aristoph. *Lysistr.* 378; Thucyd. II. 15; Poll. III. 43; — Harpocrat. s. *λουτροφόρος*.

<sup>7</sup> Eurip. *Phoen.* 347.

<sup>8</sup> Athen. X. 680.

<sup>9</sup> The passages quoted by Athenaeus, III., 123, from Antiphanes or Alexis, in which a woman says: "may I never drink of the water of freedom, if," etc., is probably said by a slave-woman as meaning "may I never be freed." But it is just conceivable that they might have been used by a girl as meaning "may I never find a husband." For other passages referring to this use of the term Eleutherion see Casaubon on the above passage of Athenaeus. Attention may be drawn also to the fact that by the end of the fourth century B. C. it was customary for freed slaves at Athens to dedicate to Athens silver saucers which were known by the name of *φιάλαι ἑλευθεριακά*. Cf. *e. g.* C. I. A. II. 2. 720.



Pausanias, having fixed the general topography of the Heraeum, proceeds to describe the site, and what he considered the objects of chief interest there. He begins with the temple which he saw before him in perfect condition in his own day, and tells us that "they say that the architect of the temple was Eupolemus, an Argive." This Argive architect is otherwise unknown to us. The foundations of this temple (the Second Temple), which was built immediately after the burning of the Old Temple in 423 B. C., were laid completely bare by us after previous excavators had made shallow cuttings at the east, north, and south sides. A sufficient number of architectural details (cf. Fig. 9) were discovered to enable Mr. Tilton to draw not only ground-plans, but also elevations of this important and beautiful building.<sup>1</sup> The temple, as far as the south, southwest, and southeast sides are concerned, was constructed on elaborate foundations of limestone, rising, at the southwest corner, to a height of about three metres. The rock on which the temple stood was cut and leveled, especially on the north side and in the interior, while the remaining inequalities of the rocky summit of this "platform" were removed by elaborate filling up with dry rubbish, similar to the procedure on the Acropolis of Athens in Cimonian times. Before the Second Temple was built, this rocky platform must have been used from the earliest times.<sup>2</sup>

Pausanias then describes, in the following terms, the sculptures which decorated the temple:<sup>3</sup> "The sculptures over the columns represent, some the birth of Zeus and the battle of gods and giants, others the Trojan war and the taking of Ilium." These sculptures, of which many interesting fragments have been found, will be dealt with at length in the special chapter on Sculpture. But we may say here that the expression *ὑπὲρ τοὺς κίονας* refers not only to the metopes, of which there were sixty-two in the temple, but also to the pediments, from the sculptures of which undoubted fragments have been discovered by us. We hope to prove, also, that the sculptured decorations of the temple illustrate Polycleitan art at its best.

Having described the outside of the temple, and standing at its east end, or entrance, Pausanias continues: "Before the entrance stand statues of women who have been priestesses of Hera, and statues of heroes," etc.<sup>4</sup> Some of the bases for such statues have been found in our excavations to the northeast of the Second Temple (see Figures 2 and 10). It is important to note that there are no traces of such statues at the west side of the temple, where, moreover, the nature of the space would not have admitted of their erection. This fact alone would contradict the assumption that

<sup>1</sup> See chapter on Architecture (pp. 117 ff.).

<sup>2</sup> One or more large altars doubtless stood on the site later occupied by the Second Temple. Some vestiges of these altars may remain in the rough masonry within the foundations of the temple, while the so-called black layers of soil, to which reference will be made below, though almost continuous round and below the foundations of the temple from east to west on the south side, were thicker and richer in finds at certain points or "pockets," and must, as at Olympia, have marked the locality of an ancient altar. The slight remains of the rudest form of early walls, to my mind antedating the Cyclopean wall of the upper terrace, to be seen on the bed-rock on the southernmost slope and to the west of this temple platform, also confirm the earlier use to which this part of the Heraeum precinct was put before the building of the Second Temple.

<sup>3</sup> I give throughout Mr. Frazer's translation.

<sup>4</sup> Cf. also Paus. III. 5, 6; Thucyd. IV. 133; Arnob. VI. 23 ed. Reiff. p. 207. Such statues were certainly placed there before the middle of the fifth century B. C., and probably much earlier; for Chryseis had been priestess for forty-eight years at the beginning of the Peloponnesian War (Thucyd. II. 2). Moreover, as Curtius (*Ges. Abhandl.* I. 44) has drawn attention to the fact that the Argives did not remove the statue of Chryseis in spite of the destruction of the temple through her negligence, such statues of priestesses must have been erected during the lifetime of the priestesses: Hitzig-Blümner, *Pausanias*, I. 2, p. 568. Similar statues are mentioned by Pausanias at Hermione (II. 35, 8) and in Cynneia in Achaia (VII. 25, 7), and were probably placed before the temple of Asclepius at Epidaurus. See Cavvadias, *Fouilles d'Épidaure*; Frazer, *Pausanias*, III. pp. 182 f.; Hitzig-Blümner, I. 2, p. 565.

such statues existed at the west end, even if Pausanias did not distinctly limit them to the east end.

Now, entering the temple, Pausanias says: "In the fore-temple are ancient images of the Graces on the left, and on the right is a couch of Hera, and a votive offering consisting of the shield which Menelaus once took from Euphorbus at Ilium." He then enters the *naós* proper, and is there at once confronted by the great gold and ivory image of Hera by Polycleitus, the culminating work of art of the whole sanctuary, of the whole Argive district, nay, with the Olympian Zeus and the Athene Parthenos of Phidias, of the whole of ancient Greece. For we must never forget that ancient authorities use terms of praise with regard to this work (upon which the fame of Polycleitus to a great extent rested) which correspond to those applied to the great works of Phidias,<sup>1</sup> and that one authority, Strabo,<sup>2</sup> calls it "the most beautiful work of all." Though colossal in dimensions the



FIG. 10. — FOUNDATIONS OF THE SECOND TEMPLE, SHOWING STATUE-BASES AT THE EASTERN END.

statue of Hera was not so large as either the Zeus or the Athena of Phidias. According to Mr. Tilton<sup>3</sup> the total height of the image, including the base and the top of the throne, was about eight metres, the seated figure of the goddess alone about 5.50 metres. Pausanias describes it as follows: —

"The statue of Hera is seated on a throne, and is of colossal size: it is made of gold and ivory, and is a work of Polycleitus. On her head is a crown with the Graces and Seasons wrought on it in relief: in one hand she carries a pomegranate, in the other a sceptre. The story about the pomegranate I shall omit as it is of a somewhat mystic nature; but the cuckoo perched on the sceptre is explained by a story that when Zeus was in love with the maiden Hera he changed

<sup>1</sup> See Overbeck, *Schriftquellen*, pp. 166 and 167. Lucian (*Somn.* 8), while referring to the four greatest artists (Phidias, Polycleitus, Praxiteles, and Myron), singles out two works — the Zeus of Phidias and the Hera of Polycleitus. Plutarch (*Pericl.* 2) couples the same two statues,

while Martial (X. 89) says Phidias would have been glad to claim the Hera as his work.

<sup>2</sup> VIII. p. 372 (*Overb. Schriftquellen*, No. 933).

<sup>3</sup> See his own account of the temple below, pp. 117 f



himself into this bird, and that Hera caught the bird to play with it. . . . It is said that beside the image of Hera once stood an image of Hebe, also of ivory and gold, a work of Naucydes."

The exact position for the base of this statue of Hera is shown in Mr. Tilton's plans (cf. PLATE XVI.). We are helped in forming some conception of the general composition of this great statue by extant Argive coins;<sup>1</sup> though we must remember the evident truth that small coins of a later period (these belong to imperial Rome) can hardly convey any adequate idea of the artistic spirit or finish of such colossal statues by a master-hand. However, these coins show us the seated Hera on her throne, and even represent the pomegranate in her right hand, and the sceptre upheld by her left hand (Fig. 11). We



FIG. 11 *a, b.* — TWO COINS OF ARGOS. THE HERA OF POLYCLEITUS.

naturally come much closer to the artistic spirit of the statue in such coins as do not attempt to render the whole figure and throne, but merely give the head. One of these Argive coins,<sup>2</sup> in particular, has been recognized by all authorities as being directly inspired by the gold and ivory statue of Polycleitus (Fig. 12). Furtwängler<sup>3</sup> goes so far as to consider it a direct copy of the statue. If this be so (and I am inclined to

agree with him) we must always allow, especially in the rendering of details and ornaments, for the necessary modifications to be made in reducing a head and neck from at least four to five feet in height to a flat relief half an inch in diameter. We are, then, not surprised that the elaborate decoration of the στεφάνη with Graces and Seasons, should be reduced to a decoration of flowers and honeysuckle scrolls. To realize how this reduction in ornament occurs, we need only compare with one another the several coins of this series,<sup>4</sup> which present this same type in varying degrees of artistic accuracy and excellence, to find how the στεφάνη becomes smaller and less significant, and reduces its ornament. But in view of the evidence furnished by the coin as to the ornamentation of the στεφάνη on the gold and ivory statue, it may perhaps be advisable to compare a passage in Tertullian<sup>5</sup> with the description of Pausanias. If Tertullian is referring to the Polycleitan Hera, he implies in his vine-wreath a plant-ornamentation about the head. The band part of the crown possibly — or even probably — was decorated with such a scroll pattern; while the Graces and Seasons (omitted from this coin) were fashioned in the round or in high relief, and projected as points to this crown. The coins which give the whole figure show such points.



FIG. 12. — COIN OF ARGOS. THE HEAD OF POLYCLEITUS'S HERA.

The importance of this fact and its bearing upon the results of our excavations will

<sup>1</sup> See Imhoof-Blumer and Gardner, *Numismatic Commentary on Pausanias*, p. 34, pl. i. 12, 13, 14, 15; Gardner, *Types of Greek Coins*, p. 137, and pl. viii. 13; Overbeck, *Kunstmythologie*, III. p. 41, and Münztafel ii. and iii.; Head, *Historia Nummorum*, p. 367; Frazer, *Pausanias*, III. p. 184, fig. 29; Hitzig-Blümner, *op. cit.* i. 2, pl. xvi. No. 18.

<sup>2</sup> Imhoof-Blumer and Gardner, *op. cit.* pl. i. 14; Overbeck, *op. cit.* Münztafel ii. 6; Hitzig-Blümner, *op. cit.* pl. xvi. 19.

<sup>3</sup> *Meisterwerke*, p. 413.

<sup>4</sup> Cf. the several types as given in Gardner, *Types of Greek Coins*, pl. viii.

<sup>5</sup> *De Cor. Mil.* 7. Bötticher, *Kunstmyth.* II. 288, and Bruun, *Gesch. der Griech. Künstler*, I. p. 213, refer this passage to the Polycleitan Hera, though others doubt. Cf. Hitzig-Blümner, *op. cit.* I. 2, p. 566: these same scholars (p. 567) quote several authorities in support of their view that the anthemion (*Palmetten*) ornament is intimately related to Graces and Seasons: "In der symbolischen Bedeutung stimmen freilich beide überein; denn wie die Chariten und Horen Blühen und Anmuth bedeuten, so geht auch das Anthemien-Ornament auf vegetabilischen Segen."



become evident when we compare the ornamentation on the *στεφάνη* of the coin with the marble *simā*<sup>1</sup> from the second temple, which once contained this statue, and several pieces of which we discovered in our excavations (see Architecture, Fig. 53). For it will readily be seen that the scroll pattern with honeysuckle is the same in both. Nay, it is possible that even a marked and individual feature of our *simā* ornament recurs in the ornament on the *στεφάνη* of the coin; for in the left-hand upper corner, between the two honeysuckles, there are individual traces of what I believe to be a bird, perched on a smaller volute of the scroll pattern, exactly in the place where such a bird appears in our *simā*, forming the most distinctive and characteristic feature of this Heraeum marble-work (see Figures 12 and 53).

It will readily be seen of what great importance this observation of a detail is in its bearing upon all the sculptures which we discovered in the Heraeum. For if the sculptured decoration of the temple and its stone-carving show such immediate dependence upon the sculpture in the temple-statue by Polycleitus, we have a strong bit of evidence from the works themselves that the sculptures which ornamented the temple itself stood, as regards their authorship, in immediate relation to the temple-statue. Such evidence, arising directly out of the works themselves, has, from the nature of the case, never before appeared, and it is manifest what light by analogy this may throw upon the great question of the relation which Phidias held to the Parthenon sculptures — nay, upon the whole question of the authorship of sculptured decorations in Greek temples.

This Argive coin is thus the most authentic illustration extant of the type of Hera as embodied by Polycleitus in his gold and ivory statue. For many years attempts have been made to identify extant marble heads with this great work of Greek sculpture. The famous Juno Ludovisi has had to cede her place to the Hera Farnese;<sup>2</sup> nor could the bust of Hera from the Egremont collection, now in the British Museum,<sup>3</sup> maintain its claim. The beautiful marble head (FRONTISPIECE) discovered in our first year's excavation<sup>4</sup> appeared and still appears to me to reflect the style of Polycleitus most directly, and to have been in so far influenced by the great statue. But I never meant to maintain or imply that it aimed in any way at being a direct copy or reproduction of the gold and ivory statue in the temple. On the other hand, I must lay stress upon the fact that it was in studying the style of this and other heads from the Heraeum sculptures that I was able to single out a bust in the British Museum (hitherto known as a head of Apollo, Bacchus, or Dionysus<sup>5</sup>) as reproducing the chief characteristics of this style. This done, a confrontation of the profile of this bust with the Argive coins led to the identification of a marble reproduction of the Polycleitan Hera which will, I believe, be universally accepted. This I hope to establish in some other place.<sup>6</sup>

By the side of the colossal statue of Hera there once stood a gold and ivory statue of Hebe. This statue, standing beside the seated goddess, is reproduced on coins of Argos

<sup>1</sup> One piece of this was first published in my *Excavations at the Heraion of Argos*, 1892, pl. vii. This *simā* will be more fully dealt with by Mr. Tilton in the chapter on Architecture (pp. 123 f.).

<sup>2</sup> Lucy M. Mitchell, *History of Anc. Sculpture*, pp. 390 ff.; Murray, *History of Greek Sculpture*, I. pp. 305 ff.; Collignon, *Histoire de la Sculpt. grecque*, I. pp. 511 ff.; Overbeck, *Gesch. d. Griech. Plast.*, 4th ed., I. pp. 509–511; Friederichs-Wolters, *Gypsabgüsse*, Nos. 500, 501; Baumeister, *Denkmäler*, p. 1352.

<sup>3</sup> *Archäol. Zeit.* XXVII. p. 32.

<sup>4</sup> See my *Excavations*, p. 11. Though I do not think it "quite certain" that this head is that of Hera, it corresponds more to that divinity than to any other; and, in spite of what Furtwängler says (*Meisterwerke*, pp. 557 and 576 ff.), I hold the same as regards the Farnese bust.

<sup>5</sup> No. 140 in the *Graeco-Roman Guide to the British Museum* (Newton); *Museum Marbles*, XI. pl. 5; Ellis, *Townley Gallery*, I. p. 322.

<sup>6</sup> Since this was written (in 1898), I have established this identification in the *Journal of Hellenic Studies*, vol. XXI. (1901), pp. 31 ff., pls. ii., iii.



of the Roman imperial times.<sup>1</sup> The passage relating to it in Pausanias is very obscure. Mr. Frazer translates it: "It is said that beside the image of Hera once stood an image of Hebe, also of ivory and gold, a work of Naucydes." In view of the date and evidence of the above-mentioned coins, it has been remarked that the expression of doubt (*λέγεται*) refers to the authorship of Naucydes and not to the existence of the statue. I might add that if it does not refer to the existence of the statue, it might apply to the identification of the statue as Hebe — nay, to identification and artist together. Thus either Pausanias did not see the statue (which appears to conform to the usual reading of the Greek); or he refers doubtfully to its being a work of Naucydes; or he doubts whether it is a statue of Hebe; or, finally, he doubts whether the statue beside Hera is the Naucydean Hebe. This Naucydes is recognized as the son of Patrocles,<sup>2</sup> nephew and probably pupil of the great Polycleitus. His brothers, also well-known sculptors, were Daedalus and the younger Polycleitus. He may in his youth have been an assistant, besides being the pupil of Polycleitus, and hence, as is the case with the pupils and assistants of Phidias, the ascription to him of part of the gold and ivory statues in the Heraeum may have been open to doubt.

The mind of Pausanias is evidently still in the temple when he proceeds to describe more archaic images of Hera such as the one he mentions as being on a pillar. This statue must not be confused with the earliest symbolical pillar representing Hera mentioned by Clement of Alexandria.<sup>3</sup> Of this earliest symbolical pillar we shall have more to say when we deal with the sculpture; for it is highly probable that we have discovered a portion of it in our excavations (see Fig. 15). The pillar may not have stood within the second temple. The most ancient image seen by Pausanias in the temple was "made of the wood of the wild pear-tree: it was dedicated in Tiryns by Pirasus, son of Argus, and when the Argives destroyed Tiryns they brought the image to the Heraeum: I saw it myself." The early terra-cottas, which we have found in great numbers during our excavations, will perhaps throw some light on the nature of the earliest image seen by Pausanias; and in the chapter on terra-cottas we shall again refer to this wooden image.

Pausanias then notes "some other remarkable dedicatory offerings" in the temple, such as an altar of silver with reliefs representing the marriage of Hebe and Heracles, and a golden peacock adorned with "shining stones," dedicated by the Emperor Hadrian. A peacock, this bird being sacred to Hera, is figured on the Argive coin with Hera and Hebe referred to above. General Gordon (see p. 65), in his account of his excavations at the Heraeum, mentions a part of a marble peacock which he excavated there. I no longer believe that the bronze bird we found at the end of our first year, and which I described as a peacock,<sup>4</sup> is really a peacock. Pausanias further mentions "a golden crown and purple robe, offerings of Nero," among the votive offerings in the temple.

The Periegete then leaves the interior of the temple and, unfortunately for us, breaks off his description of the site upon which were at least nine buildings besides the second temple. But we must be grateful that at least he did refer to "the foundations of the

<sup>1</sup> Imhoof-Blumer and Gardner, *op. cit.* pl. i. 15; Hitzig-Blümner, *op. cit.* I. p. 567, where especial stress is laid upon the unusual position of *τέχνη Ναυκύδους*.

<sup>2</sup> See Murray, *Hist. of Gr. Sc.* II. p. 234; Collignon, *Hist. de Sculp. grecque*; E. Gardner, *Gr. Sculp.* II. p. 338; Furtwängler, *Masterpieces*, p. 225; see also Frazer's note on Pausan. VI. 1. 3. The passages which refer to

the work of this eminent artist are in Overbeck, *Schriftquellen*, etc. No. 995 to 1001, as well as Nos. 983, 932, 547. For the inscription on the extant base of the Olympian victor Eucles, see *Die Inschriften v. Olympia*, No. 159; Löwy, *Inscr. Gr. Bildh.* No. 86; and Frazer, *l. c.*

<sup>3</sup> *Strom.* I. 24. 151, from the *Phoronis*.

<sup>4</sup> *Excavations*, etc. p. 5.



former temple above this [second] temple, together with the few other remains of it which escaped the flames." For it was the extant Cyclopean supporting wall above the Second Temple platform which put the identification of this site beyond a doubt, especially when in our excavations we found the layers of charred wood and other remains, clearly bearing out the account of its burning. With the record of the accident caused by the carelessness of the priestess Chryseis, the chapter ends, and Pausanias dismisses the Heraeum. We shall often refer to the Old Temple, and its remains will be described by Mr. Tilton in the chapter on Architecture. He will there also treat of the numerous other buildings of which Pausanias makes no mention.

## THE EARLY HISTORY OF THE HERAEUM

We have seen that geographically and topographically the Heraeum bears the closest relation to the plain defined on the south and east by Tiryns and Midea, while it is less closely connected with Mycenae and the city of Argos. The original establishment of the earliest temple of Hera on the site which it occupies would thus come from Tiryns and Midea, neither from Mycenae nor from the city of Argos.<sup>1</sup> This conclusion is borne out by all the results of our excavation, the evidence of the architectural remains on the site, as well as of all the individual finds there made, and also by the traditions of the earliest history of the Argive Plain. In fact, a careful consideration of all the material before us forces us to this conclusion.<sup>2</sup>

The chronology which I venture to give in the following pages does not aim at being absolute, but only comparative. I follow the genealogical system of Pausanias, believing

<sup>1</sup> As will be evident from passages below, there are traces of a pre-Tirynthian occupation of the Heraeum site. I have in the first instance been mainly concerned with showing that the Heraeum is pre-Mycenaean and bears an earlier relation to Tiryns. I was unwilling at the time to complicate the presentation of this view by the introduction of further hypotheses. But there can hardly be any doubt that there was a pre-Tirynthian period of the Heraeum—in fact, it looks as if this was the citadel of the earliest community in the Argive country. I have since this was written published my views on this subject in an article on 'The Earliest Hellenic Art and Civilization, and the Argive Heraeum,' *American Journal of Archaeology*, vol. IV. (1900), pp. 40 ff. Compare also an article in the *North American Review*, vol. CLXXII. No. 532 (1901), pp. 431 ff., on 'Recent Discoveries in Greece and the Mycenaean Age,' as well as the *Classical Review*, Dec., 1900, pp. 473 ff., on 'The Argive Heraeum and Bacchylides (xi. 43-84).'

<sup>2</sup> It would incur the charge of being too much were I to attempt to give the various views of all the authorities who have written on the Mycenaean and Pre-Mycenaean age. I must remain content with naming a few of the chief works to which I have referred and which the reader will find most useful. Perrot and Chipiez' *L'Art dans l'Antiquité* contains a masterly synthesis of all the material. Mr. Tsountas's articles in the *Ephemeris* have been summarized in his own book, which has been translated and reëdited in Tsountas and Manatt's *The Mycenaean Age*. Schuchhardt's *Schliemann's Ausgrabungen* has passed through two editions and has been translated into English by Mrs. Eugénie Sellers-Strong. This book gives a

good summary of Schliemann's own monographs on Troja, Mycenae, and Tiryns. To these must be added Dörpfeld's more recent articles in the *Athen. Mith.* vols. III. 1878, pp. 1 ff., and VIII (1882), pp. 241 ff.; Helbig, *Das Homerische Epos*; Milchhoefer, *Die Anfänge der Kunst*. More recent works of importance have been contributed by Diimmler, *Athen. Mith.* XI. (1886), pp. 1 ff., 44 ff.; XII. (1887), pp. 1 ff.; XIII. (1888), pp. 273 ff.; Percy Gardner, *New Chapters in Greek History*; Frazer's *Pausanias*, vol. III. pp. 98 ff., containing an excellent critical summary of Mycenaean Antiquities; Reisch, *Die Mykenische Frage*. Professor Ridgeway has raised a most important issue in his article, 'What People produced the Objects called Mycenaean?' (*Journal of Hellenic Stud.* XVI. [1896], pp. 79 ff.), and has long been engaged on a comprehensive work dealing with this question, entitled the *Early Age of Greece*, of which the first volume has recently been published. I can say with confidence that his studies must command most serious attention. In my own conclusions here given I have endeavored conscientiously to put from my mind all wider problems based upon a wider sphere of induction. The very first year of our excavation produced material which showed me that many accepted views would have to be reconsidered. Since then I have limited myself to allowing the actual facts revealed by our spades to speak for themselves, and have introduced other spheres of study and inference only as they affect the body of evidence which I can actually control. I venture to believe that our work will be the more useful in its bearing upon wider questions from being thus centralized. Individual references to other works will be made as the occasion arises.



him to have secured his accounts from the most trustworthy sources, — at the Heraeum and at Argos. I am well aware that a vast amount of wholly imaginative matter has been mingled with these myths, but I believe that a residuum of historical truth is not only contained in the stories but is attainable by us. I am not here concerned with any individual name or figure, not with Phoroneus, Proetus, etc.; but what I do feel is that the succession of Argive rulers, as handed down in the genealogy given by Pausanias, confirms the evidence we derive from other sources, — that there was a continuous “political” community in the Argive Plain long before the advent of the Atridae.

The first important evidence as to the age of the Heraeum is to be derived from the comparison of the walls of Mycenae with those of Tiryns. All authorities to my knowledge are agreed upon considering the circuit wall of Mycenae later than those of Tiryns and Midea. To quote the words of Schuchhardt: <sup>1</sup> “The walls of Tiryns give one the impression of being older than even the oldest part of the circuit wall of Mycenae. They consist of colossal blocks very little hewn and show no trace of having been restored at a later time. The circuit wall of Mycenae, on the other hand, was built originally of somewhat smaller stones, and has been subsequently strengthened and completed at various times with carefully executed ashlar and polygonal masonry.”

Now the Cyclopean supporting wall of the older Heraeum corresponds to the oldest parts of the wall of Tiryns. The colossal unhewn blocks — some of which are as much as thirteen and eighteen feet long, larger than any I have seen at Tiryns — are piled up one upon the other, supported in places by smaller stones inserted between them, and tax our imagination to suggest the methods applied by the early peoples in moving them about. We can well understand how in the minds of the Greek people the legends concerning the Lycian Cyclopes should have been grouped round such structures. Now, as we shall see, according to tradition it was Proetus who brought these Lycian craftsmen to build the walls of Tiryns, and to the same hands are to be ascribed the foundation walls of the temple of the Heraeum. On the other hand, as we shall see, tradition placed the founding of Mycenae two generations later than Proetus, — ascribing it to Perseus.

The remains which our excavations have laid bare confirm the earlier date of Tiryns in a striking manner. The upper platform upon which the Old Temple stood, facing to the east, with the broad flattened space in front, overlooked the plain towards Tiryns and Midea. Access to this front was gained either over the lower hills to the east, from the northeast, or from the southeast, where the present path from Chonica leads up to the temple. The entrance to the older sanctuary at this southeast corner passed over the elevation upon which the Second Temple was subsequently built, either at the east or more probably at the west end; and it is here, on the slope of the Second Temple, that we found, below the remains of the steps that in later times of Argive supremacy were built for the Second Temple, a large number of very early objects, especially primitive terra-cottas.

The buildings below the original temple platform veer round more and more, as it were, towards the west. Here they extend down towards the stream, not only because of the Eleutherion rites, to which reference has been made above, but, as is clearly the case in building VIII, which distinctly reminds one of a propylaeum, because we here approach the road leading from Mycenae. It is, moreover, on this site, about two hundred yards along the road to Mycenae, that we discovered three beehive-shaped tombs, with “Mycenaean” objects that are certainly connected with the Heraeum. Thus in this second period of

<sup>1</sup> Schliemann's *Ausgrabungen*, 2d ed., p. 119.



the architectural history of the Heraeum, as manifested by the remains before us, there is an inclination towards, an attraction to, Mycenae; and while the East Building (IV) and many of the buildings at the extreme eastern angle of the Second Temple platform still point to a living relation with Tiryns, the three large Western Buildings (VII, VIII, and X) distinctly show the growing preponderance of Mycenae. This is the Mycenaean Period. But at the risk of appearing fanciful and exaggerating the import of the mere position of such buildings, we would point out that the West Building (VII) and the Lower Stoa (X), while placed at the west or Mycenae end, show a tendency towards the south or Argos side, as they undoubtedly belong to a period in which the power of Argos asserted itself more and more.

When, however, the second platform was cleared and filled in to the level and the temple of Eupolemus was built, about B. C. 420, the edifices of this period, the temple itself (V), the chambers and buildings at the northeast of the second terrace (II), and the South Stoa (VI), with the elaborate terrace and steps below it, and the others to the east of it, all change their common orientation, and the splendid entrance to this temple, on the south slope, distinctly faces the city of Argos, which now reigns supreme over the land and has complete charge and patronage over the Heraeum. In the topographical history of the sacred precinct itself, the location of the buildings thus indicates three main periods, — the Tirynthian, the Mycenaean, and that of the city of Argos.

The point which concerns us most at present is the origin of the early temple, which leads us back to Tiryns and to Proetus.

But the site which we have excavated has yielded monumental evidence pointing to an earlier date for the occupation of this site by a temple of Hera than the erection of the Cyclopean walls. Objects which show the existence of inhabitants possessing distinct forms of civilized life have been found below these Cyclopean walls. We have also come upon a system of ruder and smaller walls, which point to a period anterior to the building of the Cyclopean foundation wall; for the walls in question, built of rude unhewn small stones, which probably formed the foundation for superadded walls of sun-dried brick or mud, correspond to the walls found by Schliemann at Hissarlik in his First and Second City. Now if the palace in the Second City of Hissarlik corresponds to the 'Tirynthian Palace of Proetus,'<sup>1</sup> then the structures corresponding to the earlier Hissarlik settlements must be earlier in date than the foundation walls built for Proetus at Tiryns or the Heraeum. I am here referring to the slight remains of walls immediately below the Cyclopean foundation wall on the rise above and to the east of Stoa II as well as to a series of such primitive walls found by us in excavating down to the bed-rock behind the South Stoa and between the West Building and the Second Temple. These rude walls from their primitive construction were readily destroyed, and we must consider ourselves fortunate in having found so many clear traces of them. The mass of these below the Cyclopean foundation wall were mentioned by me in my Annual Report for 1892-93.<sup>2</sup> Since within these we found the most primitive form of cooking-pot,

<sup>1</sup> This Second City was formerly, with great assurance, — evidently unwarranted scientifically in view of the complete reversal of the last opinions expressed by Dörpfeld, — identified with the Homeric city. We now hear that it is the sixth city which can "with certainty" be identified with the Homeric Troy. If this be the case, then *a fortiori* must the palaces of Tiryns and perhaps Mycenae, which correspond to the second city of Hissar-

lik, be older. To use Dörpfeld's own words: "The second stratum must be older than this stratum with the Mycenaean vases [Sixth City] — how much older it is impossible to say, but the interval cannot have been a short one, as between the two lie two other strata of poor settlements." Cf. Tsountas-Manatt, *op. cit.* p. 368.

<sup>2</sup> *Twelfth Annual Report of the American School at Athens*, pp. 30, 31.



I then surmised that they might have been dwelling-houses for the priestesses of the early temple. This may be so; but they at all events appear to me now to antedate the supporting wall of the Proetean temple. The rude lower walls of this class run with fair continuity from east to west on the lower southern slope of the Second Temple platform behind the South Stoa; but what remains of them now on the west side of the slope abutting on the supporting wall which separates the West Building from the Second Temple platform presents an unintelligible line, and certainly one which has no relation to the later structures of the West Building or of the Second Temple platform.<sup>1</sup> Outside of these walls were found the small "Salaminian" shaft-tombs (Fig. 13), and these tombs were evidently put there after the walls had been erected. It appears to me that these walls mark the peribolos of the earliest sanctuary when the Second Temple was not thought of, when the site upon which it was erected was uneven ground containing merely an altar, and that the Cyclopean foundations were not yet built in the time of Proetus. Mr. Tilton, moreover, succeeded in discovering some plan in the present indications.

At all events, it is highly probable that before the erection of the temple to which the Cyclopean supporting wall and polygonal platform belong (which would hardly have been built on this site unless for a long time before it had been associated with the cult of the goddess), there was some form of sanctuary on this spot.<sup>2</sup>

All these considerations lead us back to times long anterior to the date hitherto assigned to the beginnings of Greek civilization; that is, earlier than the Mycenaean period, generally grouped round the fifteenth century B. C. We must, moreover, always bear in mind that the Argive Heraeum is distinguished from Hissarlik-Troy, in that it is not only a site in the heart of Greece proper, but is in a district associated with the earliest records and traditions of the Hellenic people, nay, it was the spiritual centre of the earliest Hellenes of whom we have knowledge. The remains of the temple belonging to the Cyclopean wall, which we are justified in associating with Proetus of Tiryns, thus form a central point for the dating of the earliest period, with evidence of preceding and succeeding occupation. Now the method of dating Greek temples by means of their orientation, as applied by Dr. F. C. Penrose,<sup>3</sup> has provided us with definite dates for these buildings; and I have heard from the most competent astronomical authorities that, as regards the astronomical side, his computations rest on a sound scientific basis. In the case of our Heraeum such inference is much strengthened in that we have two temples, one above the other, the date of the later one absolutely fixed in historical times, and that these two temples show some divergence in the line of their orientation. Dr. Penrose has concluded that the earlier Heraeum is one of the two oldest temples in the ancient Greek world, the other being the earliest temple of Athena on the Acropolis of Athens, and he assigns to these two temples the date of B. C. 1830. I here give Dr. Penrose's letter on this subject:—

<sup>1</sup> Since I wrote this I have conferred with Mr. Tilton, our architect, who, working independently on the architectural remains, has come to the same conclusion as to the early date to be assigned to these walls. He has succeeded further in discovering indications in the vestiges of these walls at the west end which point to what was probably a tower marking the entrance to the second terrace here. This will be made clearer in the introduction to the section on Architecture (pp. 108 ff.).

<sup>2</sup> See my articles cited in note 1 on p. 25.

<sup>3</sup> 'On the Orientation of Greek Temples and the Dates of their Foundation derived from Astronomical Considerations, being a Supplement to a Paper published in the Transactions of the Royal Society in 1893,' by F. C. Penrose, F. R. S., in *Philosophical Transactions of the Royal Society for 1897*, London, 1898, vol. 190 (A), p. 43.



"In answer to your questions, the most ancient temples as derived from the orientation are (that is, according to the arbitrary constants I have used in the calculation, which, however, admit of certain allowances which I will refer to afterwards) : —

	B. C.
The Archaic Temple on the Acropolis )	
The Heraeum of Argos . . . . .	1830
3. The Athena Temple at Tegea . . . . .	1580
4. The Heraeum at Olympia . . . . .	1445
5. The Asclepieum at Epidaurus . . . . .	1370
6. The Olympieum at Athens ; i. e. Deucalion's foundations . . . . .	1000

The later Argive Heraeum is not connected in its orientation with the same star as the Old Temple. The arbitrary constants, as I have called them — and especially one of them, namely, the depression of the sun below the horizon when the star could be recognized, is a subjective matter which would allow of a little variation. In my scheme I do not allow of any capricious variation of this constant — and by so doing I hold that I get a tolerably rigid expression for the relative dates of the foundations; but there would be no great disturbance of the principle if we allow a little more depression of the sun than would be absolutely necessary for a clear visioned observer to sight the star in average fine weather.



"By allowing an additional degree of solar depression in the case of your Heraeum before the star's appearance was to be announced, the 1830 would become 1910. This arrangement would be very easily managed in practice, for instance, by allowing it to rise to the height of some mark [see cut] before it was said to be heliacal."

This, then, — B. C. 1910–1830, — is the date which we adopt for the Proctean Heraeum, and we have indications at the Heraeum of long-continued habitation before this date. We are thus driven back to dates much earlier than those hitherto assumed for the beginnings of Hellenic civilization. The only fixed date connected with the Argive region which we find is that assigned, according to Acusilaus, to Phoroneus, i. e. 1020 years before the first Olympiad, which brings us close to the year B. C. 1800. For the present it is enough to say that this computation of Acusilaus seems to have been made on some good grounds; but I should be inclined to place the period marked by Phoroneus much earlier.

But evidently it is necessary to weigh critically the ancient genealogies of the Argive rulers handed down by tradition, preserved to us in greatest completeness by Pausanias; and our main contention, of the existence of a Pre-Mycenaean period of Greek civilization, towards which all our evidence converges, will be strongly supported by such critical study. It will be finally confirmed, I believe, by the objects of earliest art and craft which we have had the good fortune to discover on this site.

In taking serious account of the local traditions of earliest Greek history handed down in ancient literature, and in weighing and sifting them critically, we must feel a general misgiving as to whether we are justified in attaching any weight to them for the purposes of historical research. This doubt is caused by the intrusion of so many myths and legends grouped round certain individual names which in themselves form a rational and simple genealogical table. But these misgivings will be greatly allayed when we consider the parallel instances within our well-authenticated historical ken to some of which my friend Professor Ridgeway has drawn my attention. It will then be seen that, by what might almost be called a mythogenetic law, popular legends have an



inherent tendency to group round the most famous and historical figures. There can, for instance, be no doubt that Charlemagne and Arthur and Vergil and Alexander the Great are historical figures, with a continuous roll of sober historical records preceding their own lives and times and following upon them. And yet there is a rich mine of legend clustering about the name of Charlemagne, the Arthurian Court, about Alexander the Great and Vergil, and, I might add, the Greek philosopher Pythagoras. These legends were sometimes formed by slow growth centuries after the period in which the central hero lived. Nay, we can, in our own day, immediately about us, study and realize the process by which story and legend are formed and crystallized about one central figure, when we but notice or recall how striking incidents or deeds, clever or epigrammatic sayings, witty or comic remarks or actions, show a natural tendency to be fathered upon persons whom we have known ourselves, and who were remarkable for any one of the qualities or actions mentioned above. So the imaginative and wonder-loving mind of the people spins its web of legend round the solid core of some prominent personality in the actual tradition of its past; and if not round a person, then round a striking object or locality. As Belger has shown in discussing Mycenae,<sup>1</sup> this is especially the case with graves and sepulchral monuments. And he has shown this process in a comparatively recent instance in the case of the tomb of a certain Count Gleichen. We can furthermore hardly be charged with arguing in a circle if, in considering carefully and giving due weight to the earliest Argive chronologies as preserved in the traditions handed down especially by Pausanias, we lay stress upon the fact that the residuum of fact which we thus obtain is strengthened by all collateral evidence in extant literature and in the ancient monuments at our disposal, and is supported by all the results of our excavations at the Heraeum. When once we grasp and control the confused mass of literary traditions concerning this earliest period of Greek history, and carefully sift the crude statements, placing them side by side in an orderly manner, the logical sobriety, the salient figures, and their organic relation to one another become manifest and convincing.

As regards the earliest Argive genealogies, Pausanias is and will ever remain the chief and safest guide. His account in the sixteenth and eighteenth chapters of the second book was evidently derived from the best traditions extant in the localities themselves in his day — and this at a time when the printing-press had not yet destroyed the persistence and accuracy of individual as well as traditional memory. Moreover, the student of Pausanias must realize that this very sphere of antiquarian research was the one in which that author was most interested and showed considerable critical capacity. In this very (sixteenth) chapter we are struck by the critical selection he makes of what is on the face of it the soundest tradition, and then adds the popular variants. Take, for instance, the careful manner in which he renders the doubtful record ascribed to Acusilaus concerning an eponymous hero of Mycenae, — Mycenaëus as a son of a similarly fictitious Sparton — and then rejects it. “I cannot accept the account which they attribute to Acusilaus, that Mycenaëus was a son of Sparton, and Sparton a son of Phoroneus; for the Lacedaemonians themselves do not admit it. The Lacedaemonians certainly have in Amyclae a statue of a woman Sparta; but it would surprise them even to hear of Sparton, son of Phoroneus.”

At first sight we must be somewhat confused by the two different accounts of the genealogy of Argive rulers, as given in the sixteenth and eighteenth chapters of Pausa-

<sup>1</sup> *Die Mykenische Lokalsage*, pp. 1 ff. Cf. also article “Heros,” in Roscher’s *Lexikon*, and Rhode’s *Psyche*, pp. 164 ff.



nias. As there given they appear to be entirely disconnected, while dealing with the same region. But a more careful study will show that they supplement one another. We understand this best when we realize what Pausanias, the traveler and antiquarian in the time of the Antonines, really did to collect this information, and what sources of information he had at his disposal on the spot.

In his journey in the previous chapters Pausanias had come southwards from Sicyon, Titane, Phlius, and Nemea, to the northern opening of the Argive plain nearest to Mycenae, just as the modern railway traveler approaches this district. Of the great centres of early Greek civilization in this plain three were practically destroyed and deserted, namely, Mycenae, Midea, and Tiryns. The centres which he found flourishing were the city of Argos and the Heraeum. Of these two the city of Argos had not always possessed supreme and primary importance in the history of the plain, or, as we shall realize more and more, it had not gained its prominent position until a comparatively late period of this early history. The Heraeum, on the other hand, had retained its essential and intrinsic importance in an unbroken sequence from the earliest times to the year in which it was visited by Pausanias. This intrinsic importance, moreover, was knit up with the very function of keeping sacred and traditional records of the past, not only by means of the list of priestesses there deposited, which served as the chronological foundation for the reckoning of the people, but also the function of preserving with piety the honor of the great goddess and the memory of the heroized ancestors of the people who founded her worship and were always intimately associated with it. At the close of the fifteenth chapter, where he leaves the Corinthian and Sicyonian regions to enter the Argive plain proper, he makes some preliminary remarks referring to the worship of Hera in this plain, and about the first figure in the genealogical series of Argive rulers, Phoroneus. Entering the plain, the first point he arrives at naturally is Mycenae, of which he gives a comparatively meagre description in the next chapter, after which he proceeds to the Heraeum and then continues his journey to Argos. It is thus at least unlikely that he would have found in the deserted village of Mycenae living records of early history, or, if he had, that he would have remained content with those that he found there in view of the living traditions in the most competent hands among the priestesses of the thriving sanctuary which he at once visits. From the Heraeum he again joins the main road, where he sees and describes the tomb and shrine of Perseus, and then enters the city of Argos. Now it is in this chapter that he gives us the genealogy of the rulers of the city of Argos.

The genealogy which Pausanias gives in the sixteenth chapter he received at the Heraeum, while that of the eighteenth chapter he gathered in the city of Argos. We are not astonished, then, to find that the Argos tradition only begins with Megapenthes, the fourteenth link in the chain of Argive rulers preserved in the Heraeum tradition; while the Heraeum tradition leads us much farther back. The relative lateness, moreover, of the foundation of this Argos dynasty, as compared with the history of the whole Argive plain, is confirmed by all other evidence. To gain a comprehensive view of this chronology before entering into details, I will at once give the following table of the two traditions and their relation to one another: —



HERAEUM TRADITION		ARGOS TRADITION	
B. C.	Phoroneus		
	Daughter of Phoroneus		
	Argus		
	Piraeus and Phorbas		
		Triopas	
	Iasus	Agenor	
	Io	Crotopus	
		Sthenelas	
		Gelanor	
	Danaus		
circ. 1830 B. C.	Lynceus		
	Abas		
	Acrisius and Proetus (Tiryns and Heraeum)		
	Danaë, Megapenthes (Argos)	Megapenthes	
	Perseus (Mycenae)	Argus	
	Four generations	Anaxagoras (Melampus and Bias)	
	Agamemnon	Alector	
		(Iphis, Capaneus)	
		Sthenelus	
		(Agamemnon) Cylarabes	
		Orestes ("Master of Argos, for he dwelt near," and added the larger part of Arcadia to his domain, Sparta, etc.)	
		Tisamenus	
		(Dorians)	
		Temenus and Cresphontes	
		etc.	

The first person we meet with in the genealogy of Pausanias, Phoroneus, is probably the native founder of the Argive people, or, more probably, the chieftain who raised the people out of their "unpolitical" state into one of comparative social order and unity. As Pausanias says:<sup>1</sup> "he brought mankind together for the first time, for hitherto they had lived scattered and solitary, and the place where they first assembled was named the city of Phoronicum." That he was native born is shown by the fact that he is called the son of the river Inachus. Now his act of civilization consisted, in the first place, in bringing the people together in a city, a place of union within and a place of strength towards the outside world. The same act of civilization is, as regards the Attic people, there ascribed to Theseus in his *Synoikismos*, an event perpetuated in the history of Attica by the Panathenaic Festival.<sup>2</sup> Similar memorials of this definite step in civilization may be found in other Greek centres.

Besides this act of political union, Phoroneus gave spiritual and social unity to the inhabitants by the establishment of the worship and the cult of Hera.<sup>3</sup> His grave was shown at Argos in later days, and he was there worshiped as a hero. Eusebius, quoting from Acusilaus,<sup>4</sup> estimates his date as having been 1020 years before the first Olympiad, which would bring us to about the year B. C. 1800. We must assign a much earlier date to him, on the ground of the genealogy of Pausanias, — about 2200 B. C.

<sup>1</sup> II. 15. 5.

<sup>2</sup> Cf. Waldstein, *Essays on the Art of Pheidias*, Note E, p. 255.

<sup>3</sup> Hyg. *Fab.* 143; Tatian, *Or. adv. Graecos*, 60; and

<sup>4</sup> 39, p. 148. Pausanias, *l. c.*, ascribes this to Inachus.

<sup>4</sup> *Praep. Ev.* X. 10.

In the case of Phoroneus, as well as of the subsequent Argive rulers mentioned above, the different ancient authors present variants as to the exact relationship which they held to one another. But I maintain emphatically that such variation, so far from proving the purely fictitious nature of these personalities, is evidence of their real existence in remote antiquity. It shows the vitality of ancient tradition, and illustrates the living manner in which it is handed on. For, if such stories and genealogies were the pure figment of some poetic or imaginative brain, they would then be more likely to show complete unanimity and logical consistency in the presentation of the individual lives as well as of the sequence in the genealogical series. The variation brings home to us and illustrates the actual process by means of which these traditions were kept alive and handed on in the different localities. And it is in this natural process, in the popular growth of tradition, that some deviation and confusion will arise as it is handed on in distinct localities. Thus we hear<sup>1</sup> that Phoroneus was the brother of Aegialeus, or Pegeus, and the husband of Peitho. And we have still greater confusion in that Peitho is made the mother of Aegialeus and Appia. The position held by Niobe is also confusing. In Apollodorus,<sup>2</sup> Phoroneus is the husband of the nymph Laodice, and thus the father of Apis and Niobe. Still another authority<sup>3</sup> makes him the father of Pelasgus, Iasus, and Agenor, and attributes to him the subdivision of the Argive district among his sons, which, we shall see in the account of Pausanias, takes place eleven generations later under Abas. The confusion which thus arises is no doubt attributable to the inaccuracy of various local traditions, increased by the poetic remoulding when once the rhapsodist and the artist puts his fashioning hand to the rough material of popular tradition. In the case of Phoroneus, we know that this was the case, and that there existed an epic poem called Phoronis.<sup>4</sup>

It is a significant fact that the inheritance seems to have passed on from Phoroneus to his grandson through the mother. According to Apollodorus (*l. c.*), the next ruler was the son of Phoroneus's daughter, by Zeus, here called Niobe. This second Argive ruler is called Argus, a name which naturally is common within these genealogies, and is found, also, at a later period, in the tradition of the city of Argos. He is mentioned by most of the authorities quoted above, as well as by Herodotus<sup>5</sup> and the Scholiast to Euripides.<sup>6</sup> He is readily confused with the other Argus Panoptes, the great grandson of this Argus, son of Agenor, whose story is so fancifully interwoven into the legend of Io.

According to the genealogy of Pausanias, Argus has two sons, Pirasus and Phorbas. Pirasus is interesting to us inasmuch as it is to him that the very ancient wooden image which Pausanias saw at the Heraeum<sup>7</sup> is ascribed. Phorbas, who becomes the father of the next ruler, Triopas, and the grandfather of Iasus and great-grandfather of Io, is confusingly merged into the whole Io group of stories, as his own name and the name Euboea all point (see above, p. 6) to legends grouping round the cow and the pasture-land of the Heraeum. But this distinctly lies beyond our province. It is enough to say that this name would lead us towards Rhodes, which archaeologically shows an interesting connection with the Argive district, as well as with Thessaly and Messene. These remarks apply also to Triopas, the son of Phorbas.

<sup>1</sup> *Schol. Eurip. Or.* 632.

<sup>2</sup> *Apollod. II.* 1. 1.

<sup>3</sup> *Hellanicus ap. Eustath.* p. 385, 38.

<sup>4</sup> *Schol. Apoll. Rhod. i.* 1129; *Clem. Alex. Strom.* I. 25, p. 380. Cf. Kinkel, *Epic. Graec. Fragg.* pp. 209-212.

<sup>5</sup> *Herod. VI.* 8.

<sup>6</sup> *Eur. Phoen.* 1116.

<sup>7</sup> *Paus. II.* 17. 5. See also passages in Overbeck's *Schriftquellen*, etc. 143-146. We attach some importance to this tradition as regards the earliest images of Hera, and shall refer to it when dealing with the terra-cottas from the Heraeum.



The sons of Triopas are Iasus and Agenor. In the case of Iasus we again have traces of great confusion of tradition, inasmuch as he is alternately called the son of Triopas, the son of Phoroneus, and brother of Pelasgus and Agenor<sup>1</sup> son of Argus and Evadne or Peitho, etc.<sup>2</sup> He is father of Io. We dare not enter here into the problems grouping round Io, in whose story we cannot go far wrong if we see either an indication of the spread of the Argive people far into the distance, to Byzantium, Ethiopia, and Egypt, — or at least some indication of intercourse between the Argive people and those of these distant realms. Nor can we here decide the puzzling question of Io's relation to the Hera cult in Argos and in Euboea, her identification with the cow, or even her possible identification with Hera herself. We can only point to the more sober records concerning her, which identify her with the first priestess of Hera under the name of Callithoë who headed the list of priestesses preserved at the Heraeum.<sup>3</sup> It is she who decorates the earliest image of Hera at the Heraeum in the form of a pillar (κίον) with ribbons and wreaths.<sup>4</sup> Thus, leaving all the fanciful legends aside, we have a personality intimately connected with the worship of Hera in the Argive district.

The line of rulers proceeds in the son of Io's uncle Agenor to Crotopus, her cousin, who is succeeded by Sthenelas, a name which we meet with in a slightly different form in the subsequent tradition of the city of Argos and which again appears in the Homeric story associated with this district.

With Gelanor we come to a period which undoubtedly has indications of troubled times and the passing of Argive sway into other hands, — from Gelanor to Danaus.

But Danaus in all traditions is of the blood of Argive kings, though he comes from abroad. As the tradition grouping round him points to a violent change in the ordinary succession of previous rulers, it also confirms the previous existence of generations of indigenous rulers. This important figure, who undoubtedly comes in or returns from abroad, probably from Egypt, illustrates the mythogenetic "law," which we referred to above, in concentrating upon himself a rich layer of myths. This is especially the case with the Danaids, his daughters, who are ultimately identified with the nymphs guarding the wells by means of which an early ruler increased the fertility of the dry Argive plain.

It is with one of his daughters, Hypermnestra, that Lynceus, the only survivor among the sons of Aegyptus, is wedded. Lynceus succeeds Danaus, either in the natural course of events or by slaying him, and is in turn succeeded by his son Abas.

It is difficult to determine what is the relation of this Abas to the warlike tribe, the Abantes, localized in Euboea. But the connection between Euboea and Argos is fully indicated throughout all traditions. It is to Abas that his father Lynceus gives the shield of Danaus which strikes terror among his enemies,<sup>5</sup> and it is owing to this relic shown in the Heraeum that, tradition has it, bronze shields were given to the victors in the games and that these games received the name of ἀσπὶς ἐν Ἀργεῖ.

As Danaus marked a change in the normal development of Argive rule, so another new era opens at the death of Abas, who, according to the account given in Pausanias, divides the Argive district between his two sons, Acrisius and Proetus. The district is naturally divided by the Inachus, Acrisius taking the western half, and Proetus the eastern half. But the brothers are from the very beginning<sup>6</sup> inimical to one another. Proetus

<sup>1</sup> Eustath. p. 389, 39.

<sup>2</sup> *Schol. Eurip. Phoen.* 1151 (1123, etc.).

<sup>3</sup> Cf. Roscher, *Lex. s. v.*

<sup>4</sup> *Phoronis (fr. 4) ap. Clem. Alex. Strom.* I. 25, p. 418.

<sup>5</sup> Hygin. *Fab.* 170 and 273.

<sup>6</sup> According to Apollod. II. 2. 1, these twin brothers were at variance even before they were actually born.



has to leave the country, and finds a shelter with Iobates of Lycia, whose daughter Antea or Sthenoboea he marries. He then returns and holds his portion of the plain. He brings with him the Lycian masons who build for him his fortress and palace at Tiryns. These foreign artisans thus introduce a new form of architecture and fortification among the communities civilized by Phoroneus. It is important to remark that no such act is attributed to Acrisius at Argos, and that we have no ground for believing that up to this time the city of Argos had such fortifications. It is two generations later that Perseus builds the walls of Mycenae; and we are thus not astonished to find that, while the *Iliad* speaks of Tiryns as *Τίρυνθα τειχιόεσσαν* and of Mycenae as *ἐνκτίμενον πολίεθρον* and *εὐρύαγυια Μυκῆνη* and of Ilios's *κλυτὰ τείχεα* or of the city as *εὐτείχεον*, etc., there is no attribute of this kind attached to the term Argos in the Homeric poems.<sup>1</sup> Acrisius is followed by his grandson, the son of his daughter, Perseus.

In connection with this prominent figure of Perseus again legend and myth have been freely developed. But the account of his life and deeds points, on the one hand, to foreign travel (Seriphus and Ethiopia) and, on the other hand, to Argos and Thessaly. The story of his accidentally killing his grandfather Acrisius at Larisa in Thessaly, or at Argos-Larisa (the early name for the city of Argos), points to an ethnical connection between Thessaly and Argos. He then exchanges territories with the son of Proetus, Megapenthes, or wrests the district from him. And we now find Megapenthes established on the Larisa-Argos side, and Perseus on the other or Tirynthian side. The latter now goes farther inland to the north end of the plain, and there founds the fortress-city of Mycenae.<sup>2</sup> As with Acrisius and Proetus we had the foreshadowing of a political division of the Argive district, which before had a unity of rule, so now we have a distinct and clear dualism fixed by definite fortified cities. The tradition concerning Acrisius and Proetus seems to be based upon disunion. It leads to the building of the Tirynthian fortress; then follows the fortification of Mycenae; and with Megapenthes begins the real establishment of the city of Argos. For it is a noteworthy fact that the genealogical table which Pausanias derives from the city of Argos does not begin with Acrisius or Abas but with Megapenthes.

It is not necessary for us to continue a detailed consideration of the succeeding rulers at Mycenae and the city of Argos as illustrated in the table given above. It continues from Megapenthes for at least seven generations, with the indications of internal dissensions and changes, until, in the time of Cylarabes at Argos, Agamemnon takes possession of Mycenae, and his son Orestes extends his rule over the city of Argos, over Arcadia and into Laconia.

The advent of the Atridae thus marks another epoch, which, however, does not bear such clear traces of foreign irruption. But it may be admissible to adduce even a poetic tradition in so late an authority as Dictys Cretensis (I. 16) to show that the Heraeum maintained its religious sway during the period of the Atridae at Mycenae. For it is at the Heraeum that Agamemnon is reported to have been chosen leader of the expedition against Troy.

The great change in the leadership of the Argolid takes place when in the time of Tisamenus the Dorians flood the country.

In giving this genealogy of rulers in the city of Argos as it is linked to the earlier series of indigenous rulers which we found preserved in the Heraeum tradition, the link

<sup>1</sup> See my note on 'The Argive Heraeum and Bacchylides, xi. 43-84,' *Classical Review*, December, 1900.

<sup>2</sup> Paus. II. 16.



being in Megapenthes, I have not considered the house of Melampus, who, as Pausanias tells us, was the ancestor of six kings in six generations down to Amphiloehus, son of Amphiaras. I have not done this because, as Pausanias continues, "the native dynasty of the house of Anaxagoras outlasted the other two." Nor have I referred to that splendid figure in the Homeric poems, Diomed, who is probably connected with the house of Bias, inasmuch as the name Aegialeus occurs in the genealogy and Aegialea was the wife of Diomed. I am not here concerned with an independent study of these Argive genealogies. The main reason why I have entered upon this topic at all is that any account of the striking evidence which our excavations yield, as regards the earliest monuments found, would be imperfect unless the literary traditions of these remote ages were considered and studied in the light of these finds, and the indications which they afford were used, to a certain extent, as guides in our threading of this labyrinth.

The main results which these early traditions thus yield us are, first, the confirmation in a striking manner of the chronological sequence in the history of the Argive plain — first Tiryns, then Mycenae, and then Argos; secondly, the confirmation of the evidence presented by our excavations of a considerable period of comparatively civilized life at the Heraeum, not only before the so-called Mycenaean period, but also before the building of the Cyclopean temple ascribed to Proetus of Tiryns. The study of these genealogies, moreover, confirms our belief that, though around many of these figures is grouped a rich and variegated mass of legend, and though there be variants and divergencies in the account of the succession among these rulers, the list, taken as a whole, distinctly points to the existence of organized social communities in this district long before the political life described by Homer.

With the death of Orestes and the reign of Temenus the hegemony in the Argive plain is transferred from Mycenae to the city of Argos; and here it remains ever after, until the whole district loses its prominent position in Greek history when the leadership is transferred to Athens and Sparta.

We can hardly doubt that the city of Argos obtained its real preëminence with the conquest of the land by the Dorians. What became of Mycenae and Tiryns in this period, it is difficult to determine exactly. On the one hand, we hear that all the inhabitants of the Argive district subdued by the Dorians, whose political centre was in the city of Argos, were repressed into a position corresponding very much to that of the Lacedemonian helots and were called *γυμνήτες* or *γυμνήσιοι*.<sup>1</sup> As contrasted with the inhabitants of the city of Argos they became metics, or, as they were called from the first of these subdued centres, Orneae, *περίοικοι Ὀρνεᾶται*.<sup>2</sup> Mycenae certainly appears after this time to have held a dependent relation to the city of Argos. On the other hand, both Mycenae and Tiryns must have retained a considerable amount of independence; this is evident from the fact that Mycenae sent eighty men to Thermopylae, and Mycenae and Tiryns together 400 men to Plataeae, while Argos sent none. At the close of the sixth century B. C., moreover, we find that the slaves at Argos, the *gymnesii*, after their successful revolt, settled at Tiryns and held this place against the Argives for some time.<sup>3</sup>

During the whole of this Argive period the Heraeum, no doubt, retained its religious importance over the weakened centres of Mycenae and Tiryns as well as over the Dorian

<sup>1</sup> Poll. III. 83.

<sup>2</sup> Herod. VI. 83.

<sup>3</sup> Herod. VIII. 73; cf. also Strab. VIII. 6. 11. 372 and Paus. V. 23. 2.



city of Argos. But we must not forget that, with the rise to power of Temenus at Argos and the prominent position which that city held as the capital of the Dorian confederacy or "amphictyony," new temples and new cults were established on the western bank of the Inachus and in closer proximity to the city itself; and that, moreover, as was indicated above (p. 4), the new national religion and divinities of the victorious invader were naturally pushed forward as much as possible. Thus a more or less conscious attempt would be made to give prominence to such a cult as that of Apollo Pythaeus, who was the religious expression of the distinctly national Dorian supremacy, and whose temple on the Larisa of Argos was the local centre for the Dorian league of cities (Cleonae, Phlius, Sicyon, Epidaurus, Troezen, and Aegina). We can thus understand how under the Dorians there may have been a tendency to counteract the dominant supremacy of the Heraeum. Perhaps it was this spirit of Dorian separatism which still survived into the fifth century B. C. and caused the city of Argos to refrain from sharing the glory of Thermopylae and Plataeae when Mycenae and Tiryns entered the lists.

Still, as was remarked above (pp. 4-6), the overpowering prestige of the Heraeum, the most ancient of the great centres of ancient Hellas, withstood all these temporary attempts at repression, and it retained its supreme sway and its high position in the Greek religious world so long as the Argive district itself remained a place of importance. With the successors of Temenus, however, the Dorians could not retain for any great period the preëminence which Argos had previously enjoyed. For after Medon, who succeeded Cissus, as second after Temenus, the power of Argos began to wane. It is then, about the ninth century B. C., that the great struggle with Sparta began for the possession of Cynuria,<sup>1</sup> and it is well known who ultimately carried off the victory and gained undoubted preëminence in Peloponnesus. The rulers following Medon, Thestius, Merops, Aristodamidas, Eratus, maintained this struggle. Then followed one great figure who again gave preëminence to Argos, namely, Phidon. Under this powerful ruler, Argos revived its supremacy. He is, however, especially interesting to us for his more peaceful deeds in the history of ancient civilization; for to him is attributed, not only the establishment of a standard of fixed weights and measures, but also the coinage of money. His activity probably belongs to the second half of the eighth century B. C., though according to some it may have extended into the seventh century. We shall see of what interest he is in connection with the results of our excavations, when we come to give a summary account of the metal work there found.

A few words may suffice to indicate the subsequent history of the Heraeum in strictly historical times. After Phidon the power of Argos declines steadily during her struggle with Sparta. The crushing victory which Cleomenes of Sparta gained over the Argives about B. C. 520 is immediately connected with the Heraeum. For, as we are told by Plutarch,<sup>2</sup> when the Spartan had reduced the plain he mockingly asked for the keys of the temple that he might sacrifice to Hera. But the doors remained locked, and the heights were guarded by the enemy. So he had to remain content with sacrificing below the temple. Herodotus<sup>3</sup> makes him justify himself to his accusers after his return to Sparta by referring to an oracle and the miraculous phenomena on the image of Hera in whose sanctuary he had sacrificed.<sup>4</sup>

If Argos lost its political preëminence after the age of Phidon, it on the other hand

<sup>1</sup> Paus. II. 19. 2.

<sup>2</sup> Plutarch, *Cleom.* 26.

<sup>3</sup> Herod. VI. 76, 82.

<sup>4</sup> Pausanias (II. 20) gives other reasons why he did not actually take the city.



always retained its high position among the communities of Greece as a centre of the highest culture, its preëminence in music and in art. In the first half of the fifth century B. C. it was the home of the most famous school of sculpture, for it is to the sculptor Ageladas at Argos that the three most prominent artists of that age are reported to have gone to learn their craft, namely, Myron, Phidias, and Polycleitus. Under Polycleitus the fame of Argive sculptors rivaled that of Athens, and stood alone in its supremacy after the death of Phidias. These traditions of art maintained themselves through many generations of artists after Polycleitus. And when in 423 B. C. the old temple was burned and the new temple erected by Eupolemus was adorned with the sculptures of Polycleitus, the Heraeum received an importance and a splendor which, to some extent, counterbalanced the loss of preëminence which, as the religious centre, it had held in the centuries when the term "Argos" stood for the most representative part, nay for the whole, of the Hellenic world. With the growth and preponderance of other political centres in the subsequent history of Greece and the rising preëminence, not only of the other religious centres themselves, but also of the religious importance and weight of other divinities — a process which strikingly follows in the wake of political changes in the history of Greece — the Heraeum did not retain the highest position in the ancient religious world. It is after the downfall of Greek independence that, under the Romans, the Argolid again receives comparative political importance, and by accounts of the gifts of Hadrian and Nero,<sup>1</sup> and by the vestiges of Roman buildings which our excavations have laid bare, we have evidence of this late revival.

We cannot follow the history of the Heraeum through the Byzantine, Mediaeval, Frankish, Venetian, and Turkish times. If, however, we can picture in our imagination the ten or more splendid buildings erected on its lofty site, gleaming with their white marble over the distant plain, we can well understand how these late "Vandals," whether Christians or Moslems, were attracted by it, and how it had to pay the penalty of its preëminence and beauty by becoming the quarry from which they drew the material for the erection of their churches, fortifications, and dwellings in the modern Nauplia and Argos and in the villages of the plain.

#### THE EVIDENCE OF THE FINDS AS TO THE AGE OF THE HERAEUM.

The records of ancient traditions which we have just examined thus confirm the evidence furnished by the general topography of the sanctuary as well as by the special topography of the site as revealed in the relation of extant buildings to one another and their relative changes. The general conclusions to which these sources of evidence point are further strengthened when we examine the finds of individual objects made on the site during our excavations. In the examination to which I wish to subject these finds in this place I am far from aiming at any complete account of these various objects in themselves, nor do I propose in any way to give a complete list of what has thus been found. These will be separately dealt with by myself and the various collaborators at our excavations. But in this place I am considering these finds in their totality, in the relation which the several groups of objects bear to one another, and in the ultimate light which they can thus shed upon the history of the Heraeum as a whole, and hence upon the relation which the sanctuary and what it contained held to the general history of Greek civilization and art.

<sup>1</sup> Paus. II. 17.



When we consider the totality of our finds in individual objects, one striking fact at once impresses itself upon us from the very outset — a fact which I mentioned at once in the report of the first year's digging as well as in subsequent years,<sup>1</sup> — namely, the paucity of objects dating from the classical and later periods as compared with the vast number of primitive and pre-classical objects. Of marble sculptures we have, of course, the largest number dating from the construction of the Second Temple, about 420 B. C.; and the disappearance of other marble works, such as inscriptions, as well as of larger bronze figures, will be readily accounted for when we come to consider these objects. But the paucity of works from the "classical" and later periods becomes more striking with regard to vases, terra-cottas, small bronzes, engraved stones, etc. Here we should certainly have been justified in expecting to find objects counting at least by hundreds when compared with the mass of pre-classical objects, which are numbered by thousands. Yet, as we shall see, we have but few specimens of these objects, — in fact they are counted by units.

To account for this striking phenomenon I would make the following suggestions: —

1. The position of the sanctuary itself on the hill-slopes, in a district where the occasional rains sweep down with sudden violence and wash all before them, would naturally cause all smaller objects on the immediate surface to be washed down the slopes and to spread far afield over the plain. And this would be the case especially after the masonry and stones, massed on the surface, which would have arrested the downward flow of portable objects, had been carried away as building material by the later hordes that passed over the Argive plain. The peculiar situation of the Heraeum would thus favor the dispersion of the later objects as compared with objects originally on a level site. But even on such level sites the same conditions have been found to prevail, and have, for instance, been noticed by the German excavators at Olympia.<sup>2</sup> In speaking of the large proportion of pre-classical smaller objects there found, Furtwängler says: "By far the greater portion of our bronze finds are votive offerings or fragments of these of the early period which had already found their place below the earth before the classical epoch. That it was just the lowest layers which were richest in bronzes is to be explained by the fact that the simple, and partly rude, votive offerings of the oldest times had subsequently made room for others, and had come under the protecting cover of the earth at an early period; while, on the other hand, the votive offerings of the classical period were highly valued and carried off or cast in the melting pot in later ages by people who prized them, at least for their metallic value."

We must remember, moreover, that the chief places in which we found these smaller objects were all far below the level of the stylobate, i. e. below the actual necessary foundations of the Second Temple.

Though this fact undoubtedly accounts for a good deal, we must still feel astonished that on various points of the site we did not come upon a greater number of objects belonging to the classical and subsequent periods.

2. To account for this we must consider also the possibility that in classical times, with the rise of the city of Argos and its political supremacy over the district, as well as with the numerous other sanctuaries there built, the Heraeum may have lost the position of *unique* importance which it had previously occupied, and may thus not have attracted the same number of pious donors as was previously the case.

<sup>1</sup> See *Reports*, 1892-95.

<sup>2</sup> *Olympia* (*Architektur*, Dörpfeld), vol. II., and especially *Die Bronzen* (Furtwängler), vol. IV. pp. 1 ff.



3. Finally, we must not overlook a very important point which applies not only to the Heraeum, but to the whole of Peloponnesus and of Greece. If the later hordes carried off the metal they found, as well as objects of intrinsic value, we cannot believe that they would have transported or annihilated ceramic works, both vases and terra-cottas. Now it is with regard to these that the puzzling phenomenon which we are endeavoring to account for most clearly presents itself to us. Is it not possible, and even probable, that the early style of working cheap objects, manufactured by inferior artisans and sold by small hucksters at the gates of the temple-precinct, continued and fixed to some extent the ruder ancient style of workmanship handed down from the earliest ages? This makes it all the more incumbent upon us to bear in mind, that, though such objects probably continued to be made in later times, they even then illustrate the earlier and cruder phases of art and craft which they continue. Some can be proved to be of earliest date, some may be of a later origin; but the style of both is the same, and the later are merely a continuation of the earlier. But when, for instance, we find on this site comparatively so few vases, both black-figured and red-figured, of the ordinary Greek type, while we find later developments of the Argive (or so-called Proto-Corinthian) and Corinthian styles which mark the supreme finish of later dates — may we not then conclude that these typical black and red figured vases were never manufactured in the Argive district?<sup>1</sup> With the exception of Corinth they were perhaps never made in Peloponnesus, and found the real centre for their industrial production at Athens, Eretria, Corinth, and in Apulia, Campania, Etruria, and other Graeco-Roman centres.

Perhaps all these three causes together may have had their influence in affecting the general proportion of the objects we have found. Yet, as I have said before, by far the greater number of these objects were found in layers which obviously antedate the building of the Second Temple — nay, the fifth century B. C. Still it would be rash to say that the actual provenience (*Fundstelle*) was, in the case of most of these objects, a safe guide to their chronology within the broad outer limit I have just given. For we must consider: (1) the rough, uneven, and sloping ground occupied by these various buildings; (2) the fact that by far the greater portion of these objects were found in the ground surrounding the Second Temple platform, which ground was evidently made even and smooth, strengthened by supporting walls, for the preparation of the building; and the hollows and sides of the terrace were filled with what builders call “dry rubbish,” probably taken from the site of the burnt and destroyed temple above and packed with objects which had accumulated during centuries; and (3) that the more rugged second platform before the building of that temple served for some sacred function in the earliest times, and most probably contained a great altar, and that thus it would accumulate such objects round it in the “black layers,” which we found here like those found by the excavators of Olympia round the altars there. When we consider these facts, we have even less ground for using the provenience as a definite means of fixing the date than the German excavators had at Olympia. But even there Furtwängler<sup>2</sup> has conscientiously remarked: “Though the general characteristics of the layers as defined by us were easily recognizable throughout, they are still individually and sharply defined at but few points to allow of more definite chronological distinctions. Generally these layers gradually run into one another, and often their regular succession is disturbed. This

<sup>1</sup> Herod. V. 88 amply accounts for this. The Argives ‘The Argive Exclusion of Attic Pottery,’ *Classical Review*, 1898, p. 86.

<sup>2</sup> *L. c.*



could hardly be otherwise with the gradual construction of larger and smaller buildings and bases, of aqueducts and, at last, even of Christian graves. For these all necessitated an upheaval of the lower layers. It could thus happen at any time that older objects were transported from the lower to the higher layers, also that later objects found their way to greater depths. The individual occurrence of objects in this or that layer can therefore only be used with great caution for chronological conclusions." Furtwängler finds such conclusions admissible only when there is a regular recurrence of objects in a definite layer. Finally he points to a difficulty which *a fortiori* applies to the conditions of our excavation: "For only in comparatively few instances," he says, "have we accurate record of observations in individual finds of this kind. In order to carry this out systematically at every point in an excavation of such extent, it would have required a special staff, specially trained for this purpose, and a slow and very careful peeling off of single layers. Unfortunately the conditions of our excavations did not admit of such care."



FIG. 13. — EARLY SHAFT-TOMB CONTAINING VASES OF DULL-COLORED "MYCENAEAN" STYLE.

With these limitations we can, however, point to certain facts which may be claimed as chronological landmarks beyond the broad distinctions of the earlier and later temples and buildings.

1. Many of the earlier objects discovered on the upper terrace were found not only below the burnt layer which marked the destruction of the early temple, but below the portion of the extant wall of this temple which was visible when the temple was complete. The small piece of stylobate, which, fortunately for us, still remains standing on the Old Temple platform, is regularly and smoothly cut half way down; but below this point it remains rough. It is manifest that the rough portion was not meant to be seen when the temple was complete. We are thus justified in claiming for the objects found below this point a period antedating the first temple. Objects were also found below the huge Cyclopean stones of the supporting wall.

2. The rude smaller and earlier walls, referred to above as being on the south slope of the Second Temple platform, evidently belonged to a period when this platform was in all probability used as an altar. Portions of these walls were built on the bed-rock; and the objects found on this bed-rock level most probably belonged to the earliest period of their construction.

3. The small horizontal tomb (Fig. 13) found immediately to the south of these walls contained quaint vases decorated with linear ornaments in dull (*mattfarbige*) colors (see below, Fig. 22); while the rock-cut beehive tombs (Fig. 14) found by us in the vicinity of the Mycenaean Road contained Mycenaean vases<sup>1</sup> of Furtwängler-Loeschke's third or fourth periods.

<sup>1</sup> These will be described by Dr. Hoppin in the section on Vases.



4. Besides stone implements which point to the Neolithic period, copper and bronze were found in every part of the excavation. Iron was found in greatest profusion at the northeast corner of the Second Temple platform, as well as at the Southwest Stoa. We have thus traces of the Neolithic, the Bronze, and the Iron Ages on this site.

With these facts before us we must begin a general survey of the individual objects found, in view of the light which they may throw upon the general historical questions before us.

#### TERRA-COTTA IMAGES.

In dealing with the summary evidence of the terra-cottas we must premise a few words on plastic art in general. Besides the sculptures of the Second Temple we found a few isolated fragments of archaic or transitional sculpture in stone, but no actual stone sculptures of the earlier dates. Though there is one exception in carved stone-work to be found in the block which was subsequently used in one of the walls to the north of the Second Temple upon which the early waved pattern has been carved, there is no instance of such early sculpture in stone. From the paucity of even primitive terra-

cotta images on the Old Temple platform we may naturally conclude that the beginnings of worship on this site were in an aniconic form. The first step to the creation of an image was the erection of the pillars or *kiones* which Pausanias still saw there in his time, and of the existence of which in other centres of Greek worship we have ample evidence.<sup>1</sup>

Now, as I ventured to surmise at the time of its discovery,<sup>2</sup> it is highly probable that in the lower fragments of a large limestone "pillar" we have preserved to us the very *kion* which Pausanias saw, and which symbolizes the first image to Hera on this ancient site (see Fig. 15). The stone in question is carved into a pillar tapering towards the top in the rudest manner, evidently with primitive tools, the marks of which can still be per-



FIG. 14. — BEEHIVE TOMB NEAR THE HERAEUM, ON THE ROAD TO MYCENAE.

ceived. At the broader "foot" there is a projection forward which serves as a plinth to keep the pillar in an upright position, the projection being merely in front and not behind. It thus corresponds to the lower portion of the rudest images in stone and clay of which we have cognizance. The edges at either angle in front are leveled off

<sup>1</sup> Pausanias (II. 9. 6) mentions one representing Artemis Patroa at Sicyon. He also saw thirty of these at Pharae in Achaia, each having the name of a god (VII. 22. 4). Coins and vases give us later renderings of these early objects. So an Apollo on a coin of Ambracia (Overbeck, *Griech. Kunstmyth.* V. pp. 1-5, Münztafel i. Nos. 1-7). A coin of Ceos has Hera and Zeus in the

form of two pillars (Overbeck, *l. c.* I. p. 5). So also Zeus is represented as a square pillar on a vase (Gerhard, *Akadem. Abhandl.* p. 59, Nos. 2, 3, 4, 7; cf. Collignon, *Hist. Sculpt. Gr.* p. 103).

<sup>2</sup> See *Report*, 1892, and my *Excavations of the American School at the Heraion*, etc. p. 19.

so as to make it hexagonal. This pillar could have served no architectural purpose of which we know, and, standing upright as it does, with all the marks of the most primitive workmanship, we are justified in believing that such an object of no intrinsic value, which survived to the second century of our era, might be and is preserved to us now.

Of primitive idols in stone and marble chips, such as were found at Hissarlik, Paros, Naxos, Amorgos, etc., we have no specimens here at the Heraeum. On the other hand, we have the richest collection ever found of terra-cotta idols, presenting a new and unbroken series from the very earliest to the classical times, and though these terra-cottas will receive more detailed treatment in a special chapter by Dr. Chase and myself, we must now consider them in their general connection, and their bearing upon the main point before us.

I may say at once that we find types of "Mycenaeen" figurines at the Heraeum, but we also find a much larger number of types distinctly earlier in an unbroken series, among which we can distinguish at least two categories.

The first and earliest type was probably developed out of the symbolic *kion* (Fig. 16). The primitive coroplast has merely taken small lumps of clay, and has fashioned them into a mere suggestion of a human form by indicating projections for the arms. The lower portion of the body remains in rude, uneven roundness, and for the head he has merely allowed the upper portion to be squeezed into an almost conical shape. There is no further articulation, and no distinction of sex. But this primitive coroplast is not as yet tied down to any fixed conventionalized type, and so there is a gradual development and progress in his naturalism within the narrow range of his artistic power (Fig. 17).

Gradually the arms become more extended, the clay is pinched more firmly, accentuating the waist still further, until, at last, the workman gives another pinch between his two fingers to the portion which he has left for the head, and proceeds to add two minute globules of clay on either side of this protuberance of the head to indicate the eyes. From this moment he proceeds to elaborate this bird-like face, adding a round circle of clay to the top, which is meant to indicate either the hair, or more probably, in this case, the *polos* or early diadem of the goddess Hera. Without indicating the sex of the figurine by means of modeling, he does so by the indication of dress; and to the bird-like head is added a series of ornate decorations running round the neck and breast from shoulder to shoulder, which soon becomes one of the most striking features in these Heraeum terra-cottas. In the special chapter on terra-cottas, we shall deal with the question whether these ornaments are necklaces with brooches at the shoulders, or scarves, or even wreaths

of flowers, or, finally, indicate an elaborate folding and ornamentation to the top of the low-necked dress. We have summarized in a few words what really represents a most varied series, illustrative of a very long and continuous development.



FIG. 15. — EARLY STONE "PILLAR IMAGE."  
From the Heraeum.



FIG. 16. — PRIMITIVE TERRA-COTTA FIGURINE.  
From the Heraeum.



A new stage is reached when these figures that have been represented as standing erect are represented as seated (Fig. 18). This is done in a quaint manner, in that the flat lower portion of the figure is bent forward, thus forming a step-like projection, and then two thin, tusk-like pieces of clay are stuck on behind, like the legs of a chair, which made it possible for the figurine to be set down in this quasi-seated posture. In technique and detail work, this second class is also much further advanced. Besides the elaborate ornamentation round the shoulders, the arms are in many cases actually modeled, and the waist is indicated with greater naturalism. A few more ambitious coroplasts have attempted to model the whole chair or throne, and actually to place one of these figures upon it. When we recall the fact that the erection of a seated image in wood is attributed to Piraeus,<sup>1</sup> the son of Argus, and that Pausanias saw this early image made of pear-tree at the Heraeum, whither it had been brought from Tiryns, and that, further, this sacred image was seated, — we may attribute the innovation in our terra-cottas which, from this point, belong chiefly to the seated type, to the influence of such an image endowed with great sanctity. But the idols of this class do not



FIG. 18. — EARLY SEATED FIGURE.  
From the Heraeum.



FIG. 17. — EARLY FEMALE  
FIGURE, SHOWING DEVELOPMENT OF  
DRAPERY.  
From the Heraeum.

rise above the bird-shaped head; and, in spite of the prominent influence of some such seated examples, even upon the standing types of this period, there is no hard and fast conventionalized type to be found. I mean by this, that with all the quaint and crude artistic imperfections of the primitive coroplast's work, there is a free and naturalistic tendency, which leads him to produce varieties, with marked differences in the extent to which he indicates articulation and individual details among these types.

It is important to note that specimens of these two earliest types were found by Schliemann at Tiryns,<sup>2</sup> but that to my knowledge few have been found at Mycenae.<sup>3</sup> We thus call this second category, marked by the seated figure of earliest technique, Tirynthian-Argive.

The next, or third category with which we have to deal, the Mycenaean type (Fig. 19), is found chiefly at Mycenae and Mycenaean centres; and has been found also at Tiryns and the Heraeum.

As in the graves of Mycenae, so in the rock-cut beehive tombs with Mycenaean pottery,

<sup>1</sup> See above, p. 24.

<sup>2</sup> *Tiryns*, pp. 150 ff., figs. 77-93; p. 359, fig. 159; and Perrot-Chipiez, vol. VI. p. 750.

<sup>3</sup> Since I wrote this, Dr. Chase has informed me that in one "exceptional" grave at Mycenae, Tsountas has found isolated specimens of such terra-cottas.



discovered by us in close proximity to the Heraeum, these early images are found with the most beautiful specimens of Mycenaean ware in pottery as well as other materials.

At first sight it might appear that these thoroughly conventional figurines are earlier than some of those we have just described. They consist, in form, generally of a round elongated foot, like that of a cup, a flattened, more or less circular or semicircular body above it, again reminding us of a Mycenaean cup, and an upper portion which generally curves outward and leaves the top like the lip or rim of a vase. This general outline, in spite of all detailed variation, is kept in a fixed and stereotyped manner, and is adhered to as a convention by the modeler in so manifest a way, that he clearly tells us he does not intend to follow nature, though he is well able to do so. Thus in their bare outline they are further removed from naturalism than many specimens of the primitive type we have just examined. On the other hand, the fine clay of which they are made, the certainty of touch and neatness with which they are modeled in this conventionalized form, and, above all, the modeling and painted decoration on any portions which the artist chose thus to decorate, show a degree of artistic skill and a suppressed power of naturalism which is never to be met with in the works of the previous class, and is not always found in some of the succeeding classes. Within the circumference of this rounded, shield-shaped, flattened surface which represents the torso, the female breasts and the arms hidden under the drapery (compare Fig. 19) are indicated with great delicacy and skill, and are certainly out of keeping with the stiff convention of the outline form. Moreover, the painted ornamentation shows a power of free-hand brush-work, a fluency and variety of line, which are the reverse of conventional, and which, together with the glazed color used, are to be found only in vases of the Mycenaean order.



FIG. 19. — MYCENAEAN  
TYPE OF TERRA-COTTA.  
From a Tomb near the He-  
raeum.

We are here brought face to face with a most curious phenomenon: whereas the chief distinctive characteristic of Mycenaean art in other spheres is its naturalism (especially when contrasted with the "Geometric" style which succeeds it), we have the most pronounced instance of stereotyped conventionalism in the form of these figures. But this archaeological paradox is most readily accounted for by the explanation which the facts invariably attending their discovery necessarily force upon us. These figurines are, we may say, almost always found together with Mycenaean vases; and their painted decoration betrays the hand of the maker of these vases. Their shape, moreover, is constructively and intrinsically "vase-like." They are distinctly ceramic figurines, and not coroplastic figurines. Now it was the Mycenaean potter who produced the greatest innovations and marks the greatest advance in ceramic art, — we may say for all times. But besides his chief characteristic of naturalistic painting and his introduction of glazed color into ceramic painting, there is one thing which appears to me almost greater and more important, — he was the first really to establish constructive and final ceramic forms and shapes for the vessels that were to receive, retain, and preserve fluids. And it is this central tectonic attitude of mind of the ceramist which has influenced him in fashioning these Mycenaean figurines, and in giving them the stereotyped form to which he adheres. We have this interesting phe-



nomenon in the early history of clay-work: the primitive clay-worker is before all a coroplast, and actually models his vessel with his hand. He is thus sometimes misguided into giving eccentric animal or human shapes to some of his early vessels.<sup>1</sup> The Mycenaean clay-worker is before all a ceramist, and thus introduces ceramic conventionalism into his terra-cotta figurines.

It is curious to note how the vase-rimmed head is even introduced into a most complex terra-cotta of this Mycenaean class, in which a female figure is represented as holding an infant in her arms.<sup>2</sup>

This third Mycenaean class was not powerful enough to drive the previous classes out of the field, for these show a continuous development.

It is to Dr. Chase that I owe the identification of a "Dipylon" class of figurines, recognized by him as such chiefly by the colored ornamentation on the dresses which indicate the Dipylon style (Fig. 20). These types, while presenting the same marked con-



FIG. 20. — FIGURE OF THE "DIPYLON" CLASS.  
From the Heraeum.

trasts to those of the Mycenaean order as the previous classes, and showing a general relation to the more primitive figurines, are more advanced in the treatment of the head, in which they do not, however, attain the distinct naturalism of the succeeding class. The most marked fact to be noticed in this category is the extreme paucity of the specimens of human figures, — there is comparatively a greater abundance of animal terra-cottas of this class. This fact, it appears to me, can be explained by one of two causes: either the human figure was not frequently represented by the "artists" of the Dipylon period, or the people to whom they belonged did not dwell for a long period in the Argive district, nor exercise great influence upon the artistic life of the place.

When we realize how imperfect and wooden, how completely "decorative" and conventionalized is the treatment of human figures on the Dipylon vases, we must at the same time realize that this purely conventional and decorative treatment does not lend itself to the spirit of art production in plastic works, — either in terra-cotta or stone. The statue and statuette as such,

which arise out of a naturalistic as opposed to a decorative impulse, are not likely to be developed by such workers. In bronze, we might more readily find them, because the maker of bronze vessels and implements of peace and war would use the same technique

<sup>1</sup> See Schliemann's *Ilios*, pp. 340-345; 375, 377, etc.; *op. cit.* VI. p. 743, and Collignon, *Hist. d. l. Sculpt. Gr.* I. p. 52.

<sup>2</sup> *Εφημερίς*, 1888, pl. ix. fig. 16; cf. also Perrot-Chipiez,

of beating the metal, and might make such figures as ornaments or appendages to the implements.

When, however, we consider according to what I hear from Mr. De Cou, that there were also comparatively few specimens of bronzes in the Dipylon (i. e. the "Attic Geometric") style, and that, as I hear from Dr. Hoppin, even the vases of this style are of small number compared to those of the other classes, we are tempted to conclude that the people who represented this technique did not dwell so long on this site, and were either assimilated rapidly, or were not adapted to leave a lasting stamp upon art production.

The fifth stage is reached in that a marked advance is made among the seated idols: namely, the bird face is superseded by the human face (Fig. 21). To the profuse and elaborate decorations round neck, breast, and shoulders of the second type, we here have added most elaborate head-dresses, in which I can see not only varieties of the *polos*, but also floral ornamentations which probably refer to the Antheia side of the Hera cult, and for which flowers from the river Asterion were woven into wreaths. How long this human shape of Heraeum figurines continued we cannot determine. We are, however, actually at the gates of recorded history when we learn<sup>1</sup> that the Argive type of the human-shaped Hera was carried to Samos by Procles, the son of Pityreus, when the latter was expelled by the Dorians from Epidaurus. This would bring us to about the year 1000 B. C. This human-shaped image superseded the *sanis*, or board-shaped idol, which was previously worshiped at Samos.<sup>2</sup>

The next (sixth) class, though not numerous, shows in subject, technique, and style the infusion of oriental influence.

After this sixth category, our terra-cottas lead us to the archaic Greek type of figurine corresponding to the erect *bretas*-shaped statues of the class of the Artemis found at Delos.<sup>2</sup>

An eighth class is distinguished from this as marking the advanced archaism of the close of the sixth and the beginning of the fifth centuries B. C.; until, finally, we have



FIG. 21. — FIGURE OF ADVANCED ARGIVE STYLE (WITH HUMAN FACE).  
From the Heraeum.

<sup>1</sup> Paus. VII. 4. 4; Menodotus of Samos *ap. Athen.* XV. 672a.

<sup>2</sup> Clement Alex. *Protrept.* IV. 18, p. 184.



a few fine specimens of heads forming a ninth class, and illustrating good Greek art of the fifth century B. C.

Before drawing the conclusions to which this survey of our terra-cottas leads us, I must point to the interesting collateral evidence furnished by the earliest types of bronzes found at Olympia and classified in so thorough a manner by Professor Furtwängler. We cannot but regret that the terra-cotta figurines, of which he tells us large numbers were found in the lowest layers round the Heraeum at Olympia,<sup>1</sup> did not receive the same thorough treatment at his hands, and are not represented in a sufficient number of specimens in the plates which illustrate the German publication. On plates xviii. and xix. of the Olympia Bronzes he has presented a most instructive series of bronze animals from the earliest primitive class to the fixed type of Geometrical style, the so-called Dipylon horse.<sup>2</sup>

The earliest and rudest primitive bronzes representing animals are made out of thin, flat sheets of bronze, and have, like our earliest terra-cottas representing human figures, only the vaguest suggestion of natural forms. The thin sheets of metal are cut to indicate legs and head, and are then twisted in various directions. The style of this rudest class is called by Furtwängler the "sheet-style" (*Blechstyl*). Then follows a very numerous class which evidently has been influenced by the process applied in fashioning such primitive figurines in terra-cotta, to which he gives the name the "*Terra-cottenstyl*."<sup>3</sup> More and more within this long series, presenting a most interesting evolution, the early bronze-worker is trying to develop a style suited tectonically to his manipulation of bronze in beating and casting, until, at last, he arrives at a fixed settled shape of horse from this technical point of view which, irrespective of naturalism or the exact imitation of what he saw in nature before him, satisfies his artistic instinct and becomes a fixed type for the small bronze horse. This stereotyping of bronze technique in this direction checks development and free effort in the tendency towards naturalism which is noticeable in the earlier primitive ware; and apparently for many generations after this establishment of the Dipylon horse, that form holds the ground and practically ends the series as far as these early layers of discoveries at Olympia are concerned.<sup>4</sup>

Somewhere within this series is to be placed a comparatively small number of animal representations,<sup>5</sup> into which the goat seems for the first time to have been introduced, which are strikingly contrasted with the main continuous series in that they possess advanced naturalism. I would suggest that these are the strictly "Mycenaean" types which apparently were found in the vicinity of the Pelopeum wall.

Now the excavators of Olympia tell us that the terra-cottas come from the very earliest layers, and, as far as their position in the earth is concerned, correspond to the very earliest bronze figures found there. These terra-cotta human figures, to judge from the specimens which are published,<sup>6</sup> mark a later stage than our earliest figurines. They are much more advanced in articulation and the sex is clearly indicated. All these terra-cottas and bronzes were found in the "black layers" surrounding the earliest altar to the south of the Heraeum wall at Olympia, towards the wall of the Pelopeum. The lowest of these layers, and partly the second as well, are earlier than the building of the Heraeum of Olympia.<sup>7</sup> The earliest layer runs beneath the foundation walls of that temple.

<sup>1</sup> See *Olympia*, IV., *Bronzen*, pl. xvii. Nos. 279, 280, 281, 283, 284, in which a few specimens of terra-cottas are given.

<sup>2</sup> *Op. cit.* pls. x., xi., xii., xiii., xiv., xv., and xvi.

<sup>3</sup> *Op. cit.* pl. x. Nos. 106-133, pl. xi. to about Nos. 177 or 178.

<sup>4</sup> Pls. xiii., xiv.

<sup>5</sup> Pls. xi. and xii. Nos. 178-196.

<sup>6</sup> Pl. xvii. Nos. 279, 280, 281, 283, 284.

<sup>7</sup> Furtwängler, *Olympia*, IV., *Bronzen*, p. 2.



Now the Heraeum of Olympia, which is the oldest temple there, and, by these finds beneath it, points to a worship of Hera on this site before the worship of Zeus was there introduced, — this Heraeum of Olympia, we are told,<sup>1</sup> was built by Scilluntians eight years after Oxylus had taken possession of Elis, which would lead us back to the Dorian invasion (between B. C. 1100 and 1000) for the building of the temple. The remarkable replacing of the old wooden pillars by later stone ones has been carefully noted by Dörpfeld.<sup>2</sup> Dr. Penrose assigns this temple to the year 1445. The date given by Pausanias may refer to the erection of the stone pillars in the early temple, which retained its original orientation and was built there by Pre-Dorian people.

Be this as it may, we know that, long before the foundations of this Olympian temple were erected, the remains of the altar and the accumulation of primitive votive offerings in the black layers surrounding it point to many generations of Hera cult on this very spot. The terra-cottas found in these early layers are much later in style than Class I. and II. of our Heraeum terra-cottas. Thus the bronzes and terra-cottas of Olympia confirm the early date which we assign to our Pre-Mycenaean terra-cottas from the Argive Heraeum.

#### VASES.

The finds of early ceramic ware at the Heraeum are so numerous and complete, and have such important bearings upon the earliest art of Greece, that, in dealing with them here, we cannot confine ourselves to their consideration merely in the light of the striking illustration they offer to the main point which we have hitherto considered in the history of the Heraeum. For their bearing upon the early history of ceramic art in Greece is such that I venture to maintain they will lead to a new classification of this important branch of archaeological evidence, or at least to a thorough reconsideration of the classification hitherto accepted. Nay, beyond this I believe that these finds furnish most invaluable material for the study of the origin and development of art in general. But while this latter aspect is most important, so that we can hardly resist drawing conclusions which the objects presented by our spades have revealed to us, we feel that the introduction of so wide and far-reaching a topic would lead us too far and would be out of proportion to the main scheme of this publication. We must therefore reserve the treatment of this aspect of our finds for some future occasion. On the other hand, it would be impossible for us to utilize our collective material of vases for the information they give as to the earliest history of the Heraeum without considering the new light which these finds throw upon the whole classification of early Greek pottery.<sup>3</sup>

At the close of our first year's digging (in 1892) one fact of fundamental importance impressed itself upon me. And though I ventured to give partial publication to these views at the successive public meetings of the American School at Athens, I did not feel justified in fixing them in print until the huge number of specimens which we had transported to Athens had been cleaned, and to some degree classified by the intelligent industry of my colleague, Dr. Hoppin.<sup>4</sup> After careful observation of the material thus before us and the mature application of inductive principles, I now feel confirmed in the

<sup>1</sup> Paus. V. 16. 1.

<sup>2</sup> *Olympia*, II. (Architecture), p. 35.

<sup>3</sup> Since this was sent to the printer, among other important discoveries and publications, the striking discoveries of Messrs. Evans and Hogarth in Crete and the publication of Professor Ridgeway's *Early Age of Greece* mark

a new departure in such inquiry. I am happy to find that these results in the main confirm the conclusions to which the Heraeum discoveries led me.

<sup>4</sup> The detailed classification of all the rich finds in vases will be given by him in the special chapter devoted to these works.



first impression which the excavations themselves forced upon me, and feel justified in submitting them to the judgment of archaeologists.

The preponderance on this site of so-called "Proto-Corinthian" ware attracted our attention at the very beginning of the excavations. And when further the fact forced itself upon our notice that in the distinctive characteristics of this ware there was a continuity, not only in its development from the earliest primitive to the latest vases, but also from the most inferior and cheapest hand-made vessel — probably sold for the smallest coin in the booths of the local potter before the walls of the sanctuary, together with the cheap and rude idols — to the most perfect specimen of delicate ceramic work, I then felt that we here had to deal with local manufacture peculiar to the

Heraeum or the Argive plain, to which I propose to give the name of *Argive-Linear*. But if this be true, then the current and established classification of all the early Greek

pottery will have to be reconsidered, and the modifications thus caused in this important class of archaeological evidence will tend to modify our views with regard to the early history of the Greek people.

The current view most widely accepted by archaeologists for the historical classification of early Greek pottery is chiefly based upon the fundamental work done by Furtwängler and Loescheke<sup>1</sup> on Mycenaean vases. In a brief form this classification is marked by the following subdivisions.<sup>2</sup>

Primitive ware, for which we practically rely upon the finds of Hissarlik, consists chiefly of rough hand-made pottery, either of the simplest rounded bowl shape, with holes for suspension by means of a cord instead of handles, or eccentric human and animal forms, which I would call the *coroplastic phase* of early pottery. The decorations upon these are chiefly those modeled or incised. This category receives scant treatment at the



FIG. 23. — MYCENAEAN VASE (FROM IALYSUS), NATURALISTIC, WITH LUSTROUS GLAZE.

From Furtwängler and Loescheke, *Mykenische Vasen*, pl. v. No. 281.



FIG. 22. — MYCENAEAN VASE, WITH DULL UNGLAZED COLOR.

From Furtwängler and Loescheke, *Mykenische Vasen*, pl. xxiv. No. 175.

hands of most writers on Greek ceramics, and is practically left as an unknown quantity,

<sup>1</sup> Furtwängler and Loescheke, *Mykenische Vasen* and *Mykenische Thongefässe*.

<sup>2</sup> Cf. Von Rohden in Baumeister's *Denkmäler des*

*Klassischen Alterthums*, article 'Vasenkunde'; Rayet et Collignon, *Hist. d. l. Céramique Grécque*; Dumont et Chaplain, *Les Ceram. d. l. Grèce Propre*.



preceding the second class with which the specifically Greek antiquities, as well as traditional history, have been supposed to begin, — namely, Mycenaean ware. This broad and diversified class includes a very early form of vase, decorated in color, which, especially in the types of Thera (Santorini), forms a transition from the primitive to the Mycenaean. As a matter of fact the Santorini vases cannot be distinguished in their essential qualities from the earliest specimens included among the Mycenaean vases. First, there are vases with dull, unglazed color (Fig. 22). From these rudimentary beginnings the Mycenaean vases rise through many categories, minutely distinguished by Furtwängler and others, to a very high form of ceramic perfection. This is especially the case when the new feature of glazed or lustrous color is added (Fig. 23), which gives such variety to their painted decorations and foreshadows the most beautiful vases of the later historical Greek periods. These vases found at Mycenae and on Mycenaean sites in company with beautiful work in gold and other materials have hitherto been connected with the Homeric descriptions of the surroundings in which the Atridae and their fellow heroes lived at Mycenae and elsewhere. The third category (Fig. 24) differs essentially from the Mycenaean class; and though it maintains, as regards the actual performance of the potter's skill, a very high standard, the peculiar taste in the forms adopted by him, as well as the peculiar system of painted ornamentation, mark a distinct change or break from the previous traditions which appear to vanish when this third class comes into the field. And as regards artistic feeling this third class distinctly shows a retrograde movement of a more inartistic people. This period has been identified with the inroad of the Dorians which swept away the Achaean civilization preceding it. From the peculiar style of ornamentation on these vases they are known as "Geometric," or, as some of the most striking examples were first found about the Dipylon gate of Athens, as "Dipylon" ware (Fig. 25). Next follows a fourth class of generally smaller vases of peculiar shape and refined workmanship, with neat linear ornamentation (Fig. 26), into which subsequently friezes of certain animals are introduced (Fig. 27), the so-called Proto-Corinthian ware, for which Dr. Hoppin has with good reason proposed the name "Argive."<sup>1</sup> This gradually becomes more elaborate and redundant in its decoration, until it naturally leads over to a class intimately related to it, namely, the fifth class, or Corinthian ware. It is at this point that oriental influences are manifest in the wealth, as well as in the specific details, of ornamentation. But in time these foreign characteristics are eliminated in this Corinthian ware, and the final emancipation from archaic conventionalism as well as from alien influences is gradually worked out in the establishment of the typical Greek style of historical times. This is done chiefly at Athens in the earlier black-figured and then in the beautiful red-figured ware



FIG. 24. — MYCENAEAN VASE, WITH LUSTROUS GLAZE, CONVENTIONAL.

From Furtwängler and Loeschke, *Mykenische Vasen*, p. 29, fig. 17.

<sup>1</sup> See *Am. Jour. Arch.* 1900, p. 445.



of the classical period (7 and 8). In this rapid survey, I have of course omitted the minor intermediary subdivisions localized in the Greek islands and elsewhere.

What we are here chiefly concerned with is the relation which the Mycenaean vases and the style they represent hold to those forms with which in time and space they come

into immediate contact. The chief and most striking characteristic of Mycenaean ware, besides the great advance that is made in the refinement and elaboration of the clay itself, and the characteristic variety of beautiful shapes which are given to the vases as such, is to be found in the distinct artistic quality of the painted decoration, which quality corresponds to that of the designs in precious metal, in cut stones, gems, and other materials. This characteristic is the free naturalism both in the feeling for line as well as in the forms, and in the life which these lines and colors render. And this freedom of naturalistic drawing is directly opposed, and marks an antithesis, to the geometrical or more mechanical feeling of ornamentation; and thus the decorations on the typical Mycenaean vase can be appreciated in their characteristic qualities by contrasting them with those of the Geometric vase by which they are succeeded, and by the mechanical feeling of primitive decoration in the vases which precede them. The Mycenaean principle would thus be



FIG. 25. — DIPYLON VASE.  
From *Mon. d. Inst.* IX. pl. 39.

naturalistic as opposed to decorative and linear, and freehand in drawing as opposed to the more conventional decorative feeling and mechanical drawing of the geometric order.

While admitting, nay, confirming this distinctive attribute of Mycenaean vase-decoration, I on the one hand maintain that it does not apply to the earliest groups included in this subdivision, namely, the dull-colored vases, nor to a great number of later distinctly Mycenaean vases, especially small vases; and on the other hand, I would insist upon the fact that at no time was a certain geometrical element entirely excluded from the ornamentation of the Mycenaean vases. I may at once say now, what will receive fuller confirmation as we proceed, that, though, in the latest forms of Mycenaean vases showing signs of degeneracy, the growth of conventionalism prepares the way for their supersedence by the Dipylon vases, and shows transitional stages between the two, I maintain that also at the other end of the Mycenaean scale, at its earliest beginnings, we have a preponderance of geometric feeling.



The greatest confusion has been caused by the misnomer "Geometric,"<sup>1</sup> applied to the so-called Dipylon vases. As we shall see, the geometric feeling of ornamentation prevails in the earliest times, and is never lost in any period within the history of all these early vases. The characteristic difference in the application of this principle in the so-called Dipylon vase is not so much in the linear, meaningless decoration, as contrasted with the rendering of life and nature, as in the redundancy of geometrical ornament over the whole vase, which is thus subdivided by these designs into "compartments" that hold a mathematical relation to one another; and in the fact that these crowded elements of decoration are repeated, if not always with identity, at least with the greatest similarity of character. It has thus been justly remarked that this style of ornamentation on painted vases seems to have been borrowed from some other form of manufacture in which the design, owing to the mechanical system of its production, necessarily leads to this redundancy, and to this repetition. This is to be found chiefly in the art of weaving patterns or of basket-work, and it is highly probable that these crafts had their influence upon the decorative feeling of the Dipylon vase-painter.

The important point upon which I wish to insist is that the geometric feeling as expressed in regular and symmetrical lines, whether straight or curved, irrespective of any imitation of objects in nature or of any meaning beyond the direct appeal to the aesthetic sense of vision as such, was always present as a prominent element in the decoration of Mycenaean vases, and that at the earlier stages it was predominant, because these earlier stages were the direct and natural development of the same principle in primitive art.



FIG. 27. — ARGIVE (PROTO-CORINTHIAN) VASE, LATER STYLE.  
From the Heraeum.

Among the various groups into which Mycenaean vases have been divided, there is not one in which we could not find vases the decoration of which consists solely of linear or geometrical ornaments. This is especially the case with the Mycenaean vases of smaller size, — in fact, it is generally only in the larger and finer specimens that the more elaborate, naturalistic ornament is introduced. And where this naturalistic ornament is present, we must not forget that it is set off by a series of lines drawn round the vase, the most important part of its general ornament, which is so much like the Argive-Linear, hitherto called Proto-Corinthian decoration, that when we merely find fragments of Mycenaean vases containing these linear ornaments, it is extremely difficult, if not impossible, to decide whether they belong to a vase of the naturalistic Mycenaean class or to the Argive-Linear class. This is still more difficult, if not impos-

sible, in the case of small vases, where we merely have a shape that has been assigned to them as distinctly Mycenaean, but which does not seem to me to justify us in classing them as Mycenaean instead of our advanced Argive-Linear (Proto-Corinthian).

<sup>1</sup> I sincerely hope that the term "Dipylon," which in its connotation of locality corresponds to the term "Mycenaean," will be henceforth used instead of "Geometric."



FIG. 26. — ARGIVE (PROTO-CORINTHIAN) VASE, LINEAR STYLE.  
From the Heraeum.



But it may be urged that these smaller Mycenaean vases containing linear ornaments like that of the Argive-Linear class belong to a late and degenerate period, when Mycenaean naturalism was dying out, and having passed into the stage of growing conventionalization, left the field open to pure geometric design. To this I answer that the pure linear geometric feeling is present, and runs side by side with the most complete naturalism on the best specimens of all classes of Mycenaean vases, that, as we shall see, the earliest dull-colored class is purely linear, and that instances of undoubtedly Mycenaean ware can be found in which linear ornamentation is demonstrably earlier than naturalistic ornamentation found on the same site. I will here give a most striking and conclusive instance of such evidence furnished by the actual conditions of excavations. Tsountas<sup>1</sup> discovered a most important tomb at Mycenae, in which, besides numerous

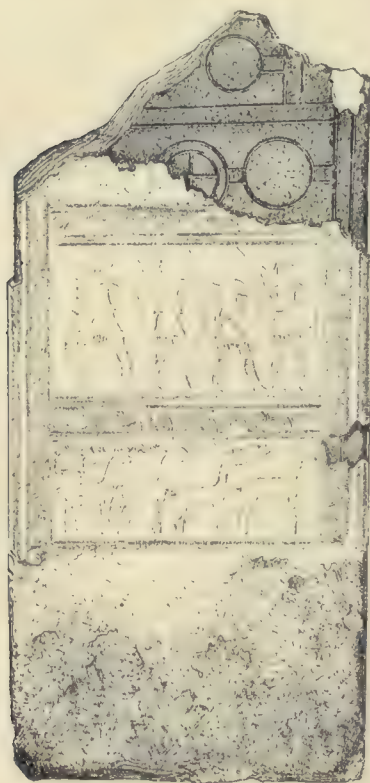


FIG. 28. — MYCENAEAN TOMBSTONE  
WITH CARVED AND PAINTED DECORATION.

From Tsountas, 'Εφημ. Αρχ. 1896.

other objects of distinctly Mycenaean ware, were vases that are decidedly not of the latest period of Mycenaean vase-painting. The end of the *dromos*, at the entrance to the tomb proper, was blocked up, as is frequently the case, by stones, among which was made the happy discovery of a stone bearing a painted procession of warriors (Fig. 28) corresponding to those that were already known from Mycenaean vase-paintings. But this discovery is still more important from the fact that below the stucco which had been applied to the surface of the stone to prepare it for the painter, in the upper portion, where this is chipped away, are the remains of earlier carved decoration, and this decoration, corresponding to that of several Argive-Linear plates and vases which we have found, consists of simple straight lines connected with circles, — a purely linear and geometrical ornamentation. Now there can be no doubt that the painted stone, which was thus used with other materials at hand to stop up the entrance to the tomb, and so must have been lying about useless for some time (there is no sign of its having formed an integral part of the decoration of the tomb), must have been considerably earlier than the objects in the tomb itself. The structure which it embellished had long gone out of use. But when this stone, embellished by geometrical ornaments, was covered with stucco upon which figures were painted, it had again completely lost its original use to make it thus available as raw material for the painter. This again implies a considerable interval. Evidently, therefore, the *linear* ornament on the stone antedates the Mycenaean painting upon it, and by a still greater period the Mycenaean vases in the tomb.<sup>2</sup>

So far from linear ornament marking a later degeneration of the Mycenaean style, I maintain that that class of ware which has hitherto been considered the earliest stage of

<sup>1</sup> 'Εφημερίς, 1896, pp. 1 ff. pls. i., ii.

<sup>2</sup> I would also draw attention to the fact that the stone carvings found at Mycenae (Schliemann, *Mycenae*; Tsountas-Manatt, pp. 91, 119, 120, etc.; Perrot-Chipiez,

VI., V.) are either completely geometrical in the case of the architectural carvings, or are subdivided by geometrical decorations, as in the case of the rudely carved tombstones with human and animal figures.



that style, namely, the class with dull-colored paintings, shows throughout nothing but this linear system; while the prevalence of hand-made ware, the ruder material, and the incompleteness in the development of ceramic forms in these vases, urge us to classify them in the Pre-Mycenaean rather than in the distinctly Mycenaean class.

If this system of linear decoration is continuous with the Mycenaean period and can in its purity be traced also in vases that belong to the Dipylon period, so that it always will be difficult to distinguish some specimens of so-called Proto-Corinthian ware from vases that may be ascribed to both these other categories, the Heraeum finds, especially in small vases, show that this system presents an unbroken development from the earliest primitive forms to the latest specimens of perfect ceramic craft. In drawing attention to this development as illustrated by our finds, I will exclude the consideration of the eccentrically shaped primitive vases. For, as has been said above, the impulse which led to the creation of these vases comes from the coroplast rather than from the ceramist. To introduce them into this question at this stage would only confuse matters.

The earliest ornamentation of our primitive pottery, as in the primitive ware all over the world,<sup>1</sup> consists not of painted decoration but of incised lines, scratched, pressed, or cut with rude instruments and with uncertain hand, upon the clay of the hand-made pot, generally in its softer stage. I here give a few specimens (Fig. 29) of this ornamentation in what were meant to be straight parallel lines or zigzag or waved ornaments.<sup>2</sup> This rude and uncertain decoration corresponds to the work of the potter who did not use the wheel. We find the same kind of pottery and ornament on all the earliest sites of the ancient world.<sup>3</sup> Linear decoration in the same stage of incipient development is found also in other early crafts, such as in what might be called gem-engraving, of which our



FIG. 29. — EXAMPLES OF INCISED LINEAR ORNAMENT.  
From the Heraeum.

<sup>1</sup> Cf. Flinders-Petrie, *Egyptian Decorative Art*, pp. 9 ff.

<sup>2</sup> See, for instance, for the pottery found in the lowest stratum at Hissarlik (Troy), Schliemann, *Ilios*, pp. 216, 217, 295, 354, 359, etc.; also, p. 563, and Nos. 1817-2000.

<sup>3</sup> The early graves excavated by Dümmler at Amor-gos, *Athen. Mith.* XI. pp. 15 ff., whether "pre-Hellenic" or not, certainly show a preponderance of the geometrical ornamentation in the pottery, where we have not the "coroplastic" eccentricity of the primitive ceramist. Compare also the decorated ware found in tombs of the Neolithic and Bronze periods in Sicily by Orsi (*Quattro Anni di Esplorazioni Sicule nella Provincia di Siracusa*, 1890-93), as well as the painted vases published in that volume, which show striking analogies to our own finds. It is also interesting to study the ornaments

of purely geometrical design on the rude objects in pre-historic lake dwellings in the valley of the Po, such as those published by Ströbel and Pigorini (in the *Bullet. di paleontol. Italian.* I., II., III., especially IV. pl. 1, 1). Cf. also Helbig, *Italiker in der Poebene*. The remote antiquity of such forms of ceramic decoration can be appreciated when we study the pottery found in Egypt, such as that of which Messrs. Flinders-Petrie and Quibell tell us that it cannot be later than the 12th dynasty, which brings us to the second half of the third millennium B. C. See Petrie and Quibell, *Nagada and Ballas*, and the other interesting Egyptian discoveries of this able excavator, which bring us, in the case of Tell-el-Amarna, face to face with Mycenaean pottery. Analogies might be found in every centre of prehistoric, nay savage, art all over the world; but I must postpone studying this wider aspect.



earliest type merely shows a rounded stone with linear scratchings upon it.<sup>1</sup> In early bronze work we see the same general system; only here the earliest form of decoration is produced not so much by scratching or incising as by beating out small bosses.<sup>2</sup>

Artistic skill and feeling for symmetry grew and were aided especially by the introduction of the potter's wheel. For the mechanical process now came in to aid the potter in producing the exactness and regularity which are essential to linear and geometric decoration. And thus the fragments which I have placed below these earliest linear scratchings show the development to which they lead after the potter's wheel is used. For the incising instrument need then be merely held firmly while the clay revolves, and the parallel lines are accurately produced without further effort. The higher standard of decorative workmanship which is thus attained drives the decorating potter to devise means of producing the same exactness in other linear and geometrical forms, whether it be a combination of zigzag lines, waved patterns, circles, or a succession of impressed dots, or even masses of clay applied to the body in straight or wavy lines in relief.

When color is introduced and painted ornamentation is applied to vases, we have the same development as the one I have just noted with reference to incisions. The earliest dull-colored ornaments are, as I have said, linear, and belong to hand-made vases; the geometric design is thus not exact, regular, and symmetrical. With the introduction of the wheel, not only does the form of the vase become more precise and symmetrical in shape, but the painted decoration follows the same lines. I have here chosen from among our finds a series (Fig. 30) of the simplest and earliest forms of vases of which similar specimens have been found in the earliest strata at Hissarlik, and we may say on all ancient sites. It is the simple small shell-like round bowl, with a hole added for suspension in the earliest specimens. The four specimens here placed in the uppermost line are hand-made, the others mark the introduction of the wheel. The one placed first at the left-hand corner is ornamented in the most elementary way by means of incision. Two lines are scratched in the inside of the bowl crossing each other in the middle in the simplest shape of a cross. Besides this, small notches are pressed into the rim. The next marks the step to painted ornamentation, and in this we have one simple line painted across the inside of the bowl; the same in the next; while the fourth has four such lines crossing one another. But these lines are drawn in a rude, uncertain manner — freehand. The specimens below them have the same linear ornamentation. But the potter has wisely desisted from drawing straight lines across, and has given a much more effective and constructive ornamentation of straight lines round the inside of the bowl, thus presenting concentric circles. This was easier for him, because they were drawn by simply holding the brush in the inside while the bowl was turned. The rough notching on the rim of the first rude specimen is reproduced on two fragments of the second line by regularly painted dots of color round the rim. And these elements remain continuous. Now the specimens on the third line would at present be classed as Mycenaean, and they certainly belong to that period chronologically; the rounded

<sup>1</sup> Mr. R. Norton will give a full and systematic account of the interesting series of early engraved stones discovered in our excavations, as well as of the earlier bone and ivory implements.

<sup>2</sup> A most interesting series might also be made if we were to take the specimens of sheet bronze found at Olympia (*Bronzen*, pl. xviii.), beginning with those de-

corated by small *repoussé* dots meant to be in regular order, but really in wavy and uncertain lines, such as Nos. 302–306, 303, and then proceed gradually to Nos. 307, 309, 308. These show a similar process of technical development such as I am here endeavoring to demonstrate in our pottery.



fragments among them are identical with the linear ornamentation on most Mycenaean vases. The specimens on the lowest line are also distinctly what is called Proto-Corinthian. But there can be no doubt that these last two lines belong to the same system of ornamentation and are a continuous development out of the system rudely applied in the flat cups at the top.

In all the more fully developed specimens of the form I have just enumerated, glazed color has superseded the earlier dull-colored decoration. The heritage handed on by the vase-painter from the early dull-colored style is the art of freehand drawing which the Mycenaean vase-painter adopts and develops still further in his naturalistic freedom when his imitative instinct directs his eye to nature, and the greater luxury of the life surrounding him leads to more richly decorated vases. But the other element in these dull-colored vase-paintings, the geometrical element, survives, and, following the more exact method suggested by the improved ceramic process in the use of the wheel, surrounds the part between the foot and the belly of the vase and that between the belly and the shoulder with a perfected system of linear ornaments.

In the smaller vases this latter process of linear ornamentation prevails, and asserts itself through the Mycenaean and the Dipylon periods down to the latest development of Argive-Linear ware, the so-called Proto-Corinthian vases.

These final specimens of the development of the Argive-Linear vase are always small, and correspond in their essential form and decoration to the earlier specimens of small vases which run through the preceding periods as just enumerated. But these earlier small vases differ from these later ones in that they generally have the manifest characteristic of cheapness stamped upon them, as wares of inferior value and humbler uses.

We are thus not astonished to find that the simpler and ruder techniques survive in them. For it must never be forgotten that the humbler forms of indigenous art retain, even in the latest periods, the technique and general characteristics of the earlier art, and this is true not only in ancient Greece, but in all times and countries.<sup>1</sup>

Now the advanced Argive-Linear, the so-called Proto-Corinthian ware, shows the most complete mastery over the potter's technique, and the greatest certainty in the use of the brush on the part of the decorator. Since the maker of the earlier small specimens of Argive-Linear ware was probably incapable of giving to his cheaper small vases the fine brush-work required for further ornamentation which the skilled vase-painter of the Mycenaean period put into the more costly large vases, — this earlier exponent of Argive-Linear technique had to remain content with mere linear decoration. More elaborate

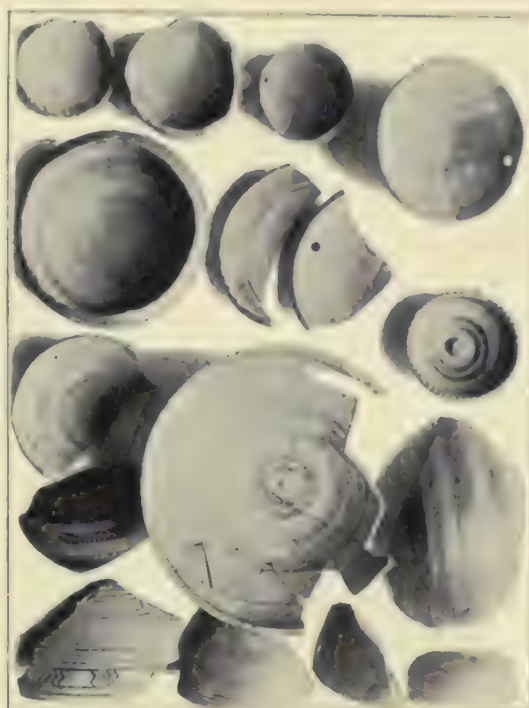


FIG. 30. — EXAMPLES OF PAINTED LINEAR ORNAMENT.  
From the Heraeum.

<sup>1</sup> Compare, for instance, cheap clay figures such as may be seen in poor shops at Florence, or the art of the baker.



forms of decorative work are thus absent from the earlier Argive-Linear ware. But in the advanced period this is no longer the case; and, by successive stages, we at last arrive at those most perfect specimens of ceramic art and decoration, unsurpassed by the best work in any period, which culminate in the miniature "Proto-Corinthian Lecythos" presented by Mr. Macmillan to the British Museum,<sup>1</sup> and, next in order, the similar specimen in the Berlin Museum.<sup>2</sup> In these vases (cf. Fig. 26), and in many of the same order preceding them by many years in time, small vases are distinctly considered worthy of the highest ceramic and decorative elaboration.

I venture to suggest the following explanation for this change in the character of such small vases. The elaborateness of the vase follows the use to which it is put. The simpler and humbler this use is, the less elaborate is its artistic form and decoration. I believe that much error would be avoided by archaeologists dealing with vases if this general truth were borne in mind. A sepulchral vase, a prize vase, a gift between lovers, would naturally invite the maker to more beautiful and luxurious decoration than when the object is a rough cooking utensil or the gift of a poor person, who buys, for the smallest coin from the huckster outside the sanctuary walls, the object which she will offer to the divinity.<sup>3</sup> Now, until the end of the Dipylon period these small vases had generally served these humbler purposes — they were the cheaper votive offerings. From this time on they become more expensive ware, probably because they are turned to more costly uses. They now become the receptacles for the precious unguents and perfumes which more luxurious forms of life introduce. These luxurious forms of life were hardly natural and indigenous to the male portion of the Doric population at Argos.

If we examine the large mass of specimens of advanced Argive-Linear or Proto-Corinthian ware found at the Heraeum, we shall see that as they advance in perfection and elaboration they tend to become, in the style of their decoration, more and more oriental in character, and it is in these later stages that they naturally lead over to the orientalizing style of early Corinthian vases. The name Proto-Corinthian has thus some intrinsic justification when applied to this limited category of the Argive-Linear ware. Now I consider it highly probable that the more luxurious habits introduced into the Doric communities at the time when these small local vases were developed in their peculiar later style were introduced from the East. These were chiefly commercial articles, not meant for the male portion of the community, but for the women. The vases which came to be used to hold these oriental unguents and perfumes became *articles de toilette*. But these articles are costly and luxurious, and the vase containing precious material is worthy of most careful treatment at the hands of the ceramist. We occasion-

<sup>1</sup> Cecil Smith, *Journ. Hellen. Stud.* XI. (1890), pp. 167 ff. pls. i., ii.

<sup>2</sup> Berliner Vasensammlung, No. 336.

<sup>3</sup> In illustration of the sliding scale of the value of votive offerings according to the means of the donor, and of the inferiority of terra-cotta idols and pinaces, made by inferior craftsmen, as compared with superior works of art, Mr. Walter Headlam has furnished me with the following interesting passages:—

τῷλέκτορος τοῦδ', ὅντιν' οἰκίης τοίχων  
κῆρυκα θύω, τὰπίδορπα\* δέξαισθε·  
οὐ γάρ τι πολλὴν οὐδ' ἔτοιμον ἀντλεῦμεν,  
ἐπεὶ τάχ' ἂν βοῦν ἢ νενημένην χοῖρον  
πολλῆς φορίνης κοῦκ ἀλέκτορ' ἦτρα

\* *Desert* only; it cannot serve for the meal itself (βρώμα).

νοῦσων ἐποιεύμεσθα, τὰς ἀπέψησας  
ἐπ' ἡπίας σὺ χεῖρας ὦ ἄναξ τείνας.  
— ἐκ δεξιῆς τὸν πίνακα, Κοκκάλη, στήσων  
τῆς Ὑγίειης.

Herodas, IV. 12-20.

Non ego ture modo aut pieta tua templa tabella ornabo, aut  
puris sarta feram manibus;

Corniger haut aries humilis, sed maxima taurus victima sacra-  
tos tinguet honore focos.

Vergil, *ad Venerem*, Baehrens' *Poetae Latini Minores*,  
II. p. 176.

ὥσπερ ἂν εἴ τις Φειδίαν τοῦ τὸ τῆς Ἀθηνᾶς ἔδος ἐργασάμενον  
τολμᾷ καλεῖν κοροπλάθον, ἢ Ζεῦξιν καὶ Παρράσιον τὴν αὐτὴν  
ἔχειν φαίη τέχνην τοῖς τὰ πινάκια γράφουσιν.

Isocrates, *Or.* XV. 2.



ally found specimens of this ware of which the clay was so highly levigated and beautifully worked that, thin as paper, it crumbled in our hands, and could not be preserved. We must therefore not be astonished to find that orientalizing tendencies and decorations are gradually introduced into these vases, as we must remember that some of the most characteristic forms — the aryballos, the alabastron, the pyxis, certain forms of the small oinochoë — existed long before their appearance in Greece in glass, glazed and unglazed pottery of Egyptian and Phoenician origin. These foreign forms, no doubt, also had their influence on the development of the shapes in the local Argive ware of these periods.

This orientalizing phase marks the last stage in the development of the Argive-Linear pottery, which we can trace from the earliest beginnings through the linear and dull-colored painted ware, retaining its vitality especially in the smaller vases, during the Mycenaean and Dipylon periods, but manifestly also influencing the decoration of the larger vases in these times; and then, when these two great and distinct periods have passed and their influence has spent itself, the Argive-Linear form still survives in what has hitherto been called Proto-Corinthian ware, and leads organically, in its orientalizing phase, when it has run its course of many centuries, to the Corinthian ware. Though I insist upon urging the continuity of Argive-Linear pottery through all ages in the history of the Heraeum, I do not mean to imply that we cannot distinguish here and elsewhere a fixed and clearly defined class called Mycenaean, which in the important introduction of glazed color, in the evolution of beautiful ceramic shapes, and in its artistic individuality of decoration, stands out clearly in general historical development. The more we recognize the continuity of the Argive-Linear ware, the more does the Mycenaean period stand out in bold relief as a striking though natural development of some of the elements pre-formed in the more primitive dull-colored ware. So, too, the so-called Dipylon ware is equally characteristic and distinct, though it also exists at the Heraeum side by side with the Argive-Linear ware. The Dipylon ware really marks a more distinct change in its decorative characteristics (in spite of the word "geometrical") than does the Mycenaean ware. For its element of redundant geometrical decoration points, as has been said above, to the introduction of new principles borrowed from some other technique, whereas the Mycenaean, in spite of the marked advance which it represents, is still essentially a development of the principles which underlie the dull-colored primitive decoration.

This ceramic evidence seems to show that we have a continuous indigenous element represented by the Argive-Linear ware, and that the Mycenaean, as well as the Dipylon, periods are laid over, though they cannot extirpate or hide from our view this continuous indigenous layer. They may, and probably did, mark an important political or ethnical change and modification within the Argive district, be it through conquest from without, violent change of dynasty, or peaceful change through marriage and heredity within, the grafting of a new dominant class upon the older population, or, finally, peaceful commercial influences through intercommunication of peoples or exchange or importation of goods. It is beyond the purpose of our work to enter into the problems of ethnology, or to draw the historical conclusions from the archaeological material before us; but we must classify and arrange scientifically the material which good fortune has placed in our hands.

One important conclusion, bearing immediately upon the history of the Heraeum, we are bound to draw from the evidence of ceramic ware which has forced us to insist upon




a new classification of early Greek pottery. This conclusion is the same as that impressed upon us by the Heraeum terra-cottas in confirmation of all the other evidence which we have hitherto examined : — that, long before the Mycenaean period, the potter's craft passed through many stages of development at the Heraeum, and furnishes evidence of a continuous worship on this site for many generations preceding the Mycenaean age, and that this continuity speaks for the unbroken continuance of an early population, subject to changes in its social and political life — but always there.

I must draw attention finally to the complete parallelism furnished by our finds between the series of terra-cottas and the successive phases in the history of the early vases found at the Heraeum. In the vases we have the earliest specimens of primitive Argive-Linear ware with incised ornaments which correspond to our primitive class of Argive terra-cottas. The early Argive-Linear with painted ornamentation and the dull-colored paintings correspond to what I should call terra-cottas of the Tirynthian-Heraeum class. We then have the middle Argive-Linear surviving during the Mycenaean and Dipylon period, corresponding to the terra-cottas which we call Mycenaean-Argive and Geometric-Argive. The advanced Heraeum type of terra-cottas with the human shape would correspond to the advanced Argive-Linear (proto-Corinthian) period, in which certain specimens of terra-cottas show the same technique as in the vases, and form a transition to the following class of archaic terra-cottas. But before we arrive at the archaic terra-cottas, we must introduce here a series of terra-cottas that are distinctly oriental in character, and that would correspond to the orientalizing Argive-Linear period in the vases. We then come, in vases as well as in terra-cottas, to the clearly historical periods in which, through the Corinthian and the early black-figured vases, we are led to the best classical red-figured ware. Of this latter we have a few isolated specimens at the Heraeum, as we also have through the archaic and advanced archaic terra-cottas a few isolated specimens of images belonging to the best classical period. The following table will illustrate the parallelism.

Dates B. C.	Tradition.	Terra-Cottas.	Vases.	Architecture.
Before circ. 2000.	Phoroneus and his house, etc. to Proetus.	Primitive Argive.	Primitive Argive- Linear	Earliest small- stone walls.
Circ. 1800.	Proetus.	Tirynthian Argive.	Early Argive-Linear (dull-colored Myce- naean).	Cyclop. sup- porting wall at temple.
Circ. 1500.	Perseus.	Middle Heraeum and Mycenaean.	Middle Argive-Linear and Mycenaean.	N. W. Building, graves, etc.
Circ. 1400.	Persidae, Atri- dae.	Middle Heraeum and Dipylon.	Middle Argive-Linear and Dipylon.	? N. E. Peribo- lus walls.
Circ. 1000.	Procles.	Advanced Argive (human shaped).	Advanced Arg.-Lin. (Proto-Corinthian).	} Upper Stoa. West Build- ing, South- west Stoa, Second Tem- ple.
To circ. 700.	Phidon, etc.	Orientalizing.	Orientalizing Argive- Linear (Corinthian).	
Circ. 520.	. . . . .	Archaic Greek.	Black-figured.	
Circ. 460.	. . . . .	Advanced Archaic.	Early red-figured.	
Circ. 421.	. . . . .	Free classical.	Free classical.	

## BRONZES.

The bronze and metal ware found at the Heraeum will receive exhaustive treatment at the hands of Mr. De Cou. But in connection with the general history of the Heraeum and with the light which our individual finds throw upon it, I must here point to one most interesting feature of our discoveries which impressed itself upon me from the very earliest stages of our excavation. One of the singular facts in the relative number of objects found is that, with the exception of a few isolated cases in which coins appeared near the surface in our excavation, no coins whatever came to light in any of the strata in which thousands of other objects were found. The natural inference is that in the times to which these finds belong there was no coinage at Argos. This fact is moreover borne out by the general history of coinage in Greece. And (as we are able to furnish a most striking and fortunate illustration of this fact) it is to Phidon of Argos that the introduction of coinage at Aegina and of a system of weights and measures are ascribed. I cannot at this time enter into the vexed question of the exact date when Phidon of Argos lived.<sup>1</sup> Although we found no coins in the lower layers, we did, on the other hand, find innumerable objects in metal, especially bronze, among which a certain simple kind of bronze pin, developed out of the ordinary nail shape into more ornamental and elaborate forms, constantly recurred in all the earlier layers. "*Allo kumbi!*" (another nail) was the constant call of our excavators when another one of these nail-like pins was found. Besides these we were continually coming upon pieces of thinner or thicker bronze wire or rods, which in many cases had knobs at intervals, as if to be used for handles. The thought at once came to us that these were spits. In the same way we came upon iron rods in other layers, and pieces of wire twisted into decorative shapes (for instance, the *Pretzel* shape, ). Finally, in the northeast end of the Second Temple platform we were much astonished to find two huge objects of iron (Fig. 31). The one was greeted by our workmen with the call of "a cannon," for it certainly was of the dimensions and weight of a field-gun. The other, slightly smaller, was a solid mass of iron, a square bar flattened out into a lance-shaped curve, of which the point has been flattened down. The cannon-shaped iron mass was found to consist of innumerable rounded bars of metal coming to a point and held together at either end by an iron coil tightly twisted round them, so that they all presented one mass. If it had belonged to Roman times, one would have called it a huge iron rendering of the lictor's staffs.

Now when, even in the first year, this vast number of bronze spits and pins were found, the thought at once presented itself that these objects were used for their money value in metal; for it is quite impossible to believe that the men and women were constantly shedding the pins which held their garments together on this site, in a manner to produce such a mass of bronze objects as compared with the number of other finds. Nay, I felt convinced that not only these but also the innumerable bronze rings of various sizes and thicknesses — though they may have had some ritual meaning as offerings to Hera from affianced couples — were dedicated and preserved here as objects of metallic value, — and that in the daily life of the people these were used in lieu of ordinary coin. We only need study the primitive currency of other early peoples and of savages<sup>2</sup> to

<sup>1</sup> Holm (*Griech. Gesch.* I. p. 205) gives B. C. 770, also Busolt, *Griech. Gesch.* I. pp. 579-625; Ridgeway's *Stais* (*Πρακτικά*, 1895, p. 236) 745; while Beloch (*Griech. Gesch.* I. p. 280) puts him into the sixth century. See also Busolt, *Griech. Gesch.* I. pp. 579-625; Ridgeway's *Origin of Currency and Weight Standard*, pp. 210 ff.

<sup>2</sup> Compare Ridgeway, *op. cit.* cap. i. Sir John Kirk



see how such metal objects, wire rings and pins and spits, were everywhere used for money. When, finally, the two huge iron objects (Fig. 31), which could not conceivably have served any actual use, were found, the account which ancient authors give of the dedication of the spits<sup>1</sup> (ὀβελίσκοι) at this very Heraeum of Argos, when first Phidon struck money at Aegina, seemed the only explanation of the facts of our finds, which thus, on their side, furnish us with a most striking archaeological confirmation of the statements of ancient historical writers.

The evidence of all the several departments of individual finds, each dealt with by my competent collaborators, tends to confirm my main thesis concerning the earliest history of the Heraeum, and to bear out the chronological classification forced upon me by the general and special topography of the Heraeum, the architectural evidence of the remains, the local traditions of the district, and by a careful study of the terra-cottas and vases.

Mr. De Cou, who for more than four years has devoted himself to the cleaning and most painstaking study of the bronze objects for purposes of final classification, sends me the following brief abstract of the general chronological grouping of the bronzes which he has been led to adopt from his prolonged study of the objects themselves. It will be seen that his classification, arrived at quite independently from those of the other objects, strictly corresponds in the main to these. His caution regarding the bronzes of the primitive period is but natural, as we should expect but few objects of this material at this early stage of civilization. It is also interesting to note that, as in the case of our terra-cottas, the bronzes belonging to the "Geometric" style are comparatively few in number.

The bronzes from the Argive Heraeum he has classified as follows : —

"The objects described in the catalogue are arranged : (1) according to what they are or represent ; (2) according to their style ; e. g. all the horses or all the birds are kept together, but are arranged in classes and catalogue reference according to their style.

"Evidence for date and style is not furnished by the conditions of the site, except for the *terminus ante quem* 423 B. C. — nor do any of the bronzes appear of themselves to be subsequent to that date. For details one must depend mainly on the excavations of graves in Argolis, Attica, the Cyclades, etc.

"There is no evidence that any of the bronzes from the Heraeum are of other than native manufacture. In the case, however, of the nude female figure with lotus head-dress, reflex Rhodian influence may be suspected.

"The objects may be assigned to a Primitive, a Mycenaean, a Geometric, and an Archaic style and period in rough chronological sequence. Objects which suggest the so-called Oriental style are included with the Archaic.

"*Primitive.* There are no bronze objects from the Heraeum which necessarily must be put here, but it is probable that some of the wire, nails, and chisels, some of the plain rings, and a portion of the single head straight pins (No. 52, etc.) should be put in this period. The same is, perhaps, true of a small suspension vase somewhat resembling the Aegean type with standard and suspension holes at the side. Other objects which possibly may be of this period are an oblong plain bead (No. 1547), some of the plain shallow saucers, certain headless corrugated straight pins (e. g. No. 116), and the plain open bracelet (No. 970).

"*Mycenaean.* 1. Shaft-grave period. The Acropolis graves of Mycenae have the following

has also informed me of a similar phenomenon in Zanzibar, where the natives use metal arrow-heads as coin ; but have huge, useless and thin arrow-heads over two feet high, as representing larger sums.

<sup>1</sup> *Etymol. Magn.* s. v. ὀβελίσκος : . . πάντων δὲ πρῶτος Φεί-

δων Ἀργεῖος νόμισμα ἔκοψεν ἐν Αἰγίνῃ· καὶ δοὺς τὸ νόμισμα καὶ ἀναλαβὼν τοὺς ὀβελίσκους ἀνέθηκε τῇ ἐν Ἀργεὶ Ἡρῇ· ἐπειδὴ δὲ τότε οἱ ὀβελίσκοι τὴν χεῖρα ἐπλήρουν, ταυτέστι τὴν δράκα, ἡμεῖς, καίπερ μὴ πληροῦντος τὴν δράκα τοῖς ἐξ ὀβάλοις δραχμὴν αὐτὴν λέγομεν παρὰ τὸ δράξασθαι.



objects which are represented in kind at the Heraeum: Round and diamond-shaped wire, both in straight pieces and coils, nails, spikes and chisels, large plain disks with edge folded under (cf. No. 1713), and the wishbone type of bowl-handles. 2. Of the later period represented by the graves of the lower city and other Mycenaean sites, e. g. Tiryns (in part), Vaphio, Menidhi, Salamis, etc., the Heraeum finds are more numerous, and comprise nails with thick flat heads, plain and ornamented rings, cylix or bowl handles of wishbone type, a small pitcher, shallow saucers with and without handles, disks, etc. Many of the straight pins with bead and corrugated heads, as well as those with spool-heads and inserted bronze or iron pin-shafts (Nos. 352-382), and about fifty fibulae (Nos. 808-857), together with the open screw-thread bracelet with corrugated ends (No. 972), belong here. It is also probable that the simplest form of ball spit is to be put here.

"*Geometric*. To this style belong the horses, except Nos. 14-17 (early naturalistic and transi-

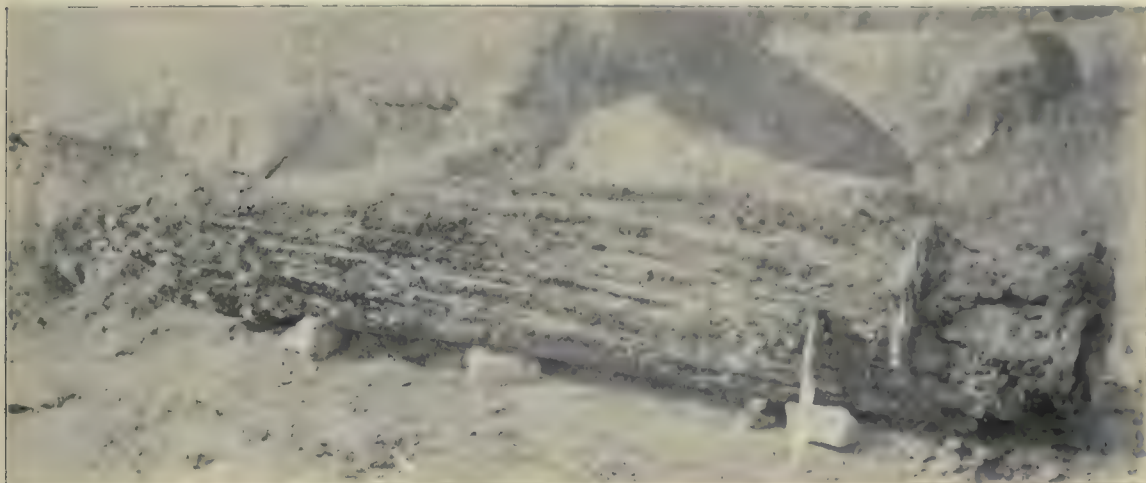


FIG. 31. — IRON BARS EXCAVATED AT THE HERAEUM.

tional) and No. 18 (archaic), the birds, the deer (Nos. 19, 20), the fragments of large tripods, the straight pins (Nos. 722-807), the fibulae (Nos. 858-881), the ornamental bands (Nos. 1748, 1749), and probably most of the engraved and punched coatings and the engraved spits. Under the influence of this style stand further the cow's head (No. 23), and the bird's tail (No. 49).

"*Archaic*. 1. Later and reflex Mycenaean (so-called Oriental) influence: cow's head (No. 25), lion (No. 29), fibulae (Nos. 883-918). 2. More independent and developed archaism: fragments of statues (locks of hair), statuettes, horse (No. 18), cows (Nos. 26, 27), mouse (No. 30, frag. No. 31), bird's head (No. 50), mirrors, saucers, sphinx amphora, fragment of rim with lotus and palmettes, low tripod stand, hand strainer, handle with engraved horses' heads, fragment of chariot antyx, imitation harness straps, ring-fibulae (Nos. 919-945), lion fibula (No. 946), cut figures (e. g. dolphin, head and neck of bird). A considerable number of the straight pins also belong here.

"The Geometric style, while interposed between the Mycenaean and Archaic styles, is represented by a smaller number of objects than either, and has left but few traces of its influence on the later style. As a result of the slight impression made by the Geometric style on the Mycenaean, the latter, through its later stages, passes either directly or with slight modification into the early Archaic. Between the two there is, as may be seen, for example, from the various types of straight pins, no essential change in technique, the difference lying mainly in the introduction of some elements of ornamentation derived from the Geometric style and some subjects like the griffin derived from the Orient. An Oriental *style* does not exist among the bronzes from the Heraeum."



## ENGRAVED STONES.

Mr. Richard Norton has had charge of the engraved stones from our excavations, and will give a separate account of these. But I may say at this place that his classification fully bears out the general conclusions concerning the Heraeum antiquities to which I have been led by the study of the other finds on our site.

## EGYPTIAN OBJECTS.

In the important chronological conclusions to which we have been led by the study of the antiquities found at the Heraeum, the Egyptian objects were left unnoticed, because I did not feel qualified to judge of them. But it appeared to me when the excavations were completed that these could throw no light upon the earliest history of that site. No Egyptian object was found below the black layer of the Old Temple, and, as far as I could ascertain from the actual finds, none came from the lowest layers near the bed-rock on any of the other sites. Those that were found would thus most probably be related to the later "orientalizing" period, as we noted it in terra-cottas, vases, etc.

Mr. A. M. Lythgoe has undertaken the publication of these objects and will further make a comparative study of those found at the Heraeum with those discovered at Eleusis and Aegina. Meanwhile he assures me "that there is no object earlier than the beginning of the so-called Late New Empire — in fact, probably not earlier than the reign of Amasis, Twenty-sixth Dynasty. That dating would include also the scarabs bearing the cartouche of Ramen-cheper."

## HISTORY OF PREVIOUS EXCAVATIONS.

The site of the Heraeum remained unknown for many centuries. Its discovery and final identification by means of excavation were achieved in our age by Colonel (later General) Gordon of Cairness in the year 1831. The first notice of this discovery was published by William Mure in 1842.<sup>1</sup> He gives the following account of the discovery and of the site: —

"It was not until my arrival at Athens that I learned that the site of the Heraeum, or temple of Juno Argive, perhaps the most important sanctuary of ancient Greece, after those of Olympia and Delphi, and hence so long, so anxiously, and so vainly sought for by travelers, had been discovered by General Gordon, several years before.<sup>2</sup> . . . The form of this eminence, of which the accompanying sketch (Fig. 32), without any pretensions to geometrical accuracy, will give a fair general idea, is nearly that of an isosceles triangle with its apex pointing to the mountain and its base to the plain. The surface is divided into three esplanades, or terraces, rising in gradation one above another, from the lower to the upper extremity. The central one of the three [our Old Temple] is supported by a massive Cyclopean substructure, still in good preservation, to a considerable height, and a conspicuous object from some distance. It was this wall, accordingly, which first attracted the general's attention. On the lowest of the three terraces he made an excavation,

<sup>1</sup> *Journal of a Tour in Greece and the Ionian Islands*, London, 1842, pp. 177 ff. He made his journey in 1838.

<sup>2</sup> This General Gordon he mentions in an earlier passage (p. 162): "Argos was at this time the headquarters of my countryman, General Gordon, who commanded in chief in the Peloponnesus. His arrival from Athens had preceded mine by several days, and a general invitation

to his table, during the period of my stay, assured me both agreeable society and excellent fare during my return from my daily rambles. The general, in addition to his extensive knowledge of the country and people, is an accomplished antiquary; and his long residence in this district had rendered him more especially familiar with its objects of interest."

which fully confirmed his previous suspicion that this was the site of the Heraeum. Besides many fragments of ornamental masonry, both in stone and marble, he disinterred various pieces of sculpture. Among these was the tail of a peacock in white marble, possibly a fragment of that which Pausanias describes as dedicated by Hadrian to the goddess,<sup>1</sup> with several small votive images, some of them bearing distinct allusions to her worship; besides lamps, vases, and other articles in bronze and terra-cotta. Among fragments of columns are none which could be considered worthy of having belonged to the porticos of so noble an edifice. The greater part of the edifice, it may be presumed, has been removed during the later ages, for the construction of modern edifices, sacred or profane. Around the mouths of wells on the plain below, and on the sites of several ruins of Byzantine or Turkish periods, are strowed massive drums of columns of the Doric order, with fragments of a similar description. The lower terrace has also its substructions of regular Hellenic masonry,<sup>2</sup> forming a breast-work to the base of the triangle towards the plain. The excavation was conducted at the general's own cost, and upon a limited scale; but, to judge by its success, were it to be followed up on a more extended plan, it could not fail to be productive of valuable results.

"The length of the surface of the hill may be about two hundred and fifty yards; its present breadth about half its length. It is protected on its flanks by steep precipices beneath which is the bed of a small torrent descending from the mountain behind, as indicated by Pausanias," etc.

In communicating this discovery of General Gordon's to Colonel Leake, Mr. Finlay says:<sup>3</sup> "It is a few hundred yards nearer the hills than where you passed, but two ravines isolate the site, and prevent it from being reached by riding close along the slope of the hills." On November 21, 1831, Finlay further writes to Leake:—

"While at Nauplia I visited the Heraeum, and spent the whole day there; and I had the good fortune to discover a curious subterraneous passage,<sup>4</sup> which escaped the attention even of Professor Thiersch of Munich, who had visited the site several times. A projection of Mount Eubœa lengthens the road from Mycenæ to these ruins, and obliges a horseman to keep so far down in the plains, that a small knoll hides the place from those who pass near it, while it remains visible at a distance, and can be seen both from Argos and Nauplia.<sup>5</sup> The eminence on which the ruins are situated is an irregular triangular platform having a precipitous apex towards Mount Eubœa, and inaccessible though not very elevated. The base of the triangle is towards Argos, and is sup-



FIG. 32. — COLONEL MURE'S PLAN OF THE SITE OF THE HERAEUM.

From his *Journal of A Tour in Greece*, vol. I. p. 179.

<sup>1</sup> This is a mistake, as Hadrian's gift was "a peacock of gold and shining stones" (Paus. III. 17. 6). Still the allusion to Hera remains, as there were also sacred peacocks in the sanctuary of Hera at Samos, etc. Cf. Frazer's *Pausanias*, Vol. III. pp. 185 ff.

<sup>2</sup> Gordon must therefore, in his excavations, have got down to the foundation walls of the Second Temple.

<sup>3</sup> Leake's *Peloponnesiaca* [supplement to his *Travels in the Morea*], published in 1846, pp. 258 ff.

<sup>4</sup> This is either a broad cavernous passage or the slope behind the buildings, to the northwest of the Old Temple, or a passage near the river to the southwest of the site immediately beside the "manhole" passage which we excavated in the first year. I do not think this one is meant.

<sup>5</sup> Leake's footnote: "From the Larissa of Argos it bears N. 27 E. from Palamidhi, N. 10 W."



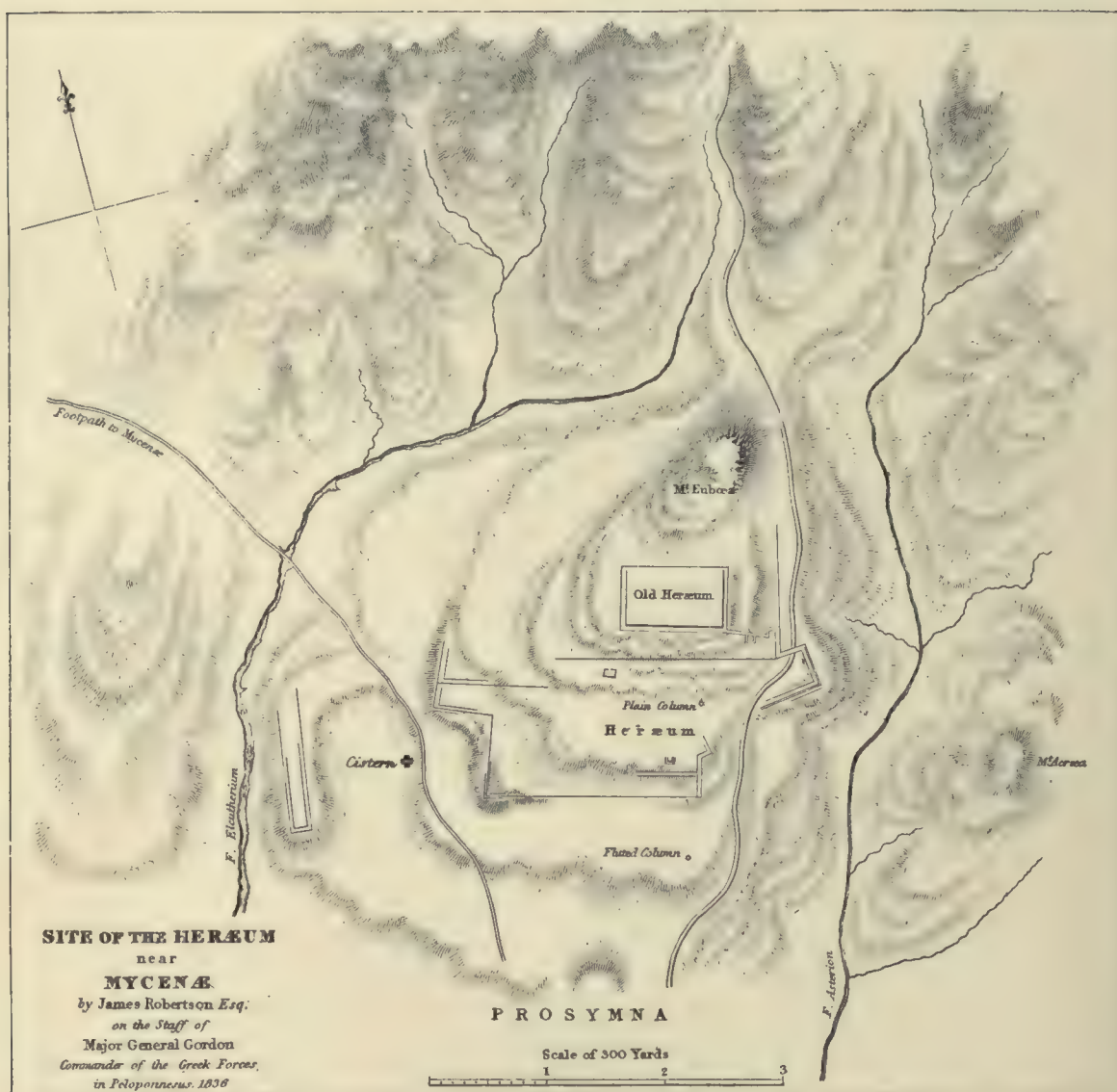


FIG. 33. — GENERAL GORDON'S PLAN OF THE SITE OF THE HERAEUM.

From Leake's *Peloponnesiaca*, 1846.

ported by a terrace in masonry, above which, at the base of the peak, is an upper terrace and a quadrangular platform. The walls of the lower terrace are generally of an inferior kind of regular masonry; but an angle towards Nauplia [probably XI on the Plan (Fig. 2), and the wall to the east of this] is of fine workmanship, and differs from all the remaining walls, in consisting of two layers of large blocks, succeeded by a narrower course. The whole of this wall is pierced with square holes, like those made for beams, very numerous, and extending over the whole surface. Below this terrace I found part of the shaft of a Doric column, eleven feet six inches in circumference, with twenty flutings. This column was of limestone, and covered with cement. The wall of the upper terrace consists of blocks, heaped rudely together in a very rough Cyclopean style; three layers of stone generally remain. One stone of a triangular form was twelve feet in the sides, and four to five feet thick; another eighteen feet long and six feet thick; the breadth was concealed by the earth. Below this terrace is another piece of a column, which seems not to have belonged to the same edifice of which that before mentioned formed a part, being of a harder limestone, roughly worked, unfluted, and 4 feet 1 inch in diameter at the only end I could measure.<sup>1</sup> There are considerable quantities of pottery scattered about."

<sup>1</sup> From the Old Temple.

After describing his search of the watercourses and his discovery of the aqueduct at the back of the Old Temple, Finlay ends his letter. But Leake mentions a second communication from Finlay in the spring of 1836 after he had spent a few days at Argos with General Gordon, who undertook a small excavation at the ruins.<sup>1</sup> He also mentions the peacock, the terra-cotta antefix, "a lion of bronze about six inches long, well preserved, some other bronzes much corroded, and some terra-cotta very rude." Soon afterwards Finlay sent Leake a plan of the site, which Leake published in his volume, and which is here reproduced (Fig. 33). It is of especial interest to us as showing the extent of Gordon's excavations on the Second Temple platform.

In the year 1853 the late archaeologist, poet, and statesman, A. Rizo Rangabé, made a great effort to collect money from all quarters of the civilized world for the purpose of excavating Olympia. His attempt was not successful, for the whole sum raised fell short of \$200 (£39, 7s.), and it was evidently quite impossible to undertake with this sum an excavation which, from the manifest indications on the surface, would necessarily assume

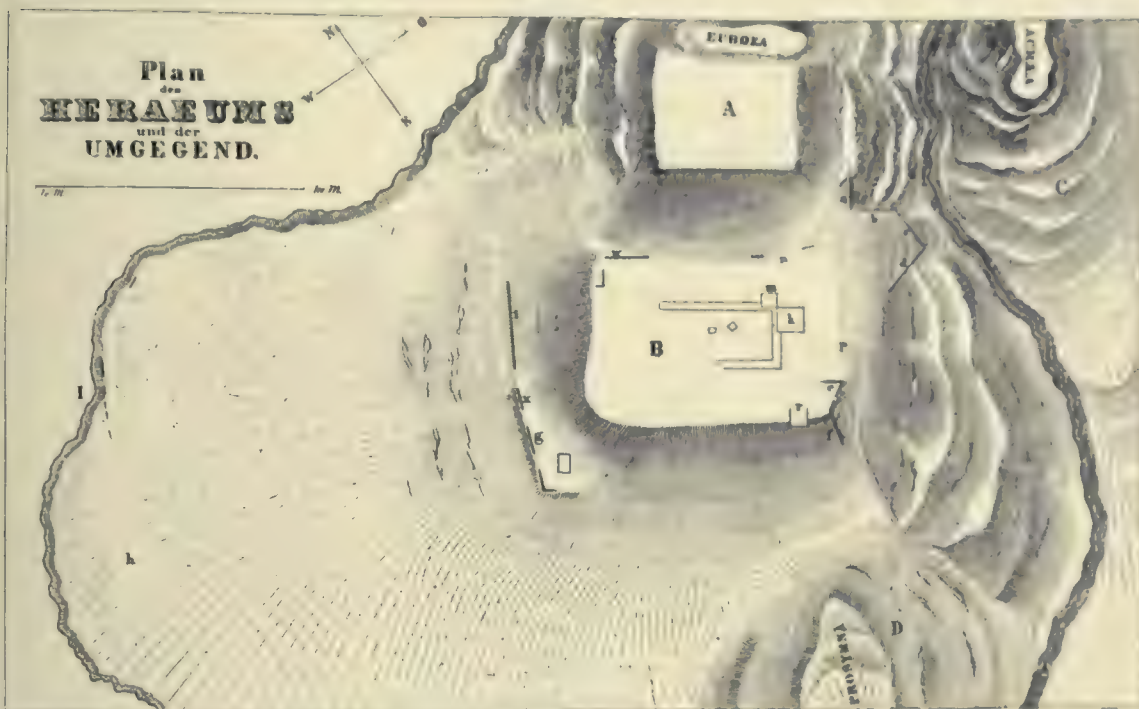


FIG. 34. — RANGABÉ'S PLAN OF THE SITE OF THE HERAEUM.  
From his *Ausgrabung beim Tempel der Hera unweit Argos*, 1855.

huge dimensions. Thus Rangabé, who was joined by the German scholar Bursian, decided to begin at what was evidently a much smaller site, but one which seemed second in importance only to Olympia, — namely, the Argive Heraeum. These excavations were thus begun in 1854. As was to be expected from the restricted means at the disposal of these excavators, the work could not be carried very far, and, as is evident from Rangabé's plan here reproduced (Fig. 34), as well as from the account given by both Rangabé<sup>2</sup> and Bursian,<sup>3</sup> was superficial. In fact, their work of excavation consisted in digging trenches along the northern side of the Second Temple foundations,

<sup>1</sup> Gordon's excavation must therefore have been made in 1836, his discovery of the site in 1831.

<sup>2</sup> A. Rizo Rangabé, *Ausgrabung beim Tempel der Hera unweit Argos*, Halle, 1855.

<sup>3</sup> *Bulletini dell. Inst. di Corresp. Arch.* 1854, pp. xi-xvii.



round the east side, and, for a short distance, along the eastern portion of the south foundation wall (Fig. 35). In our own excavation we could trace the work done by Rangabé and Bursian, but found that their trenches were not carried beyond a few feet in depth. In spite of the slightness of the work, a considerable number of interesting marble fragments from the Second Temple were discovered, one head and torso which we shall reproduce in dealing with the sculptures of the temple. We should not be justified in expecting in those infant days of excavating a proper appreciation of all the minor finds and fragments, their careful preservation and classification. There is thus no record in the accounts given by Bursian and Rangabé of the numerous objects of minor art which they found. The individual objects coming from this excavation were deposited in a house at Argos, where, a few years later, in 1857, they were seen by the Cambridge scholar W. G. Clark,<sup>1</sup> who expressed his disappointment at the results (see below, p. 70).

Rangabé's excavations, we have seen, only consisted of a shallow trench along the outside of the foundation wall of the Second Temple; and as soon as he came to the level of this (about a foot from the surface), he went to no further depth. He thus mis-

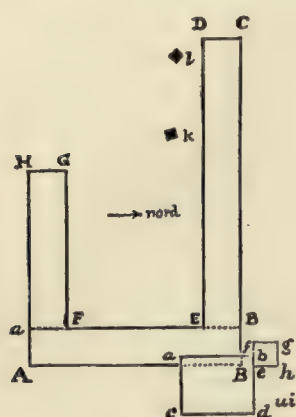


FIG. 35. — BURSIA'S PLAN.

took the top of this foundation wall for the pavement of the temple,<sup>2</sup> and carried his work no further into the interior of the temple.<sup>3</sup> But even on the surface of this wall he went to no further depth, and thus was led to believe that the "pavement" ended where the upper layers of the foundation had been removed. It is owing to this fact that on his plan he reaches only one half of the southern wall; while at this point we found it contained two layers of stone beneath, and followed it down at the southwest corner to a depth of twelve feet. He thus also shows nothing of the west side of the foundation wall, and has to make a guess as to its position.<sup>4</sup> We thus find his work at the Second Temple to have consisted only in digging a trench to a depth of not more than two to three feet, and a width of not more than five feet, from the north side, round the east, and half way down the south side. The blocks of

*poros* stone (M and K on his map) projecting from the northeast corner of the temple he conceived to have been pavements of altars (*Fussboden von Altären*) and parts of the temple, and makes a conjecture that the larger of the two (K) held the silver altar mentioned by Pausanias.

Beyond this work at the Second Temple the excavations of Rangabé were hardly carried, though trenches were dug at various points, without leading him to believe that traces of other buildings existed. They were merely undertaken for completeness' sake, at least to make sure that nothing was to be found there.<sup>5</sup> We must deeply regret that we do not hear more about the trench dug at the southeast corner of the platform and below it (out-

<sup>1</sup> His account is given in his *Peloponnesus*, pp. 83 ff., published in London, 1858.

<sup>2</sup> *Ausgrabung*, etc. p. 13, "Dieser Streif scheint der Fussboden des Peristyls zu sein."

<sup>3</sup> *Op. cit.* p. 14, "Von der inneren Fläche des Tempels ist nichts mehr vorhanden;" p. 18, "Ueber die innere Einrichtung und den inneren Schmuck des Tempels sind alle Vermuthungen schwer."

<sup>4</sup> *Op. cit.* p. 14, "Es ist aber unter den vorhandenen Verhältnissen ebenso schwierig zu sagen, welche die ge-

naue Form des Tempels war als auch zu wissen, ob die vierte [western] Seite nicht, aus irgend einem unbekannten Grunde, weit entfernt von den zwei langen lag."

<sup>5</sup> *Op. cit.* pp. 19, 20, "Die Ausgrabung wäre nicht vollständig, wenn ausser der eigentlichen Tempelstätte, auf der diese Resultate gewonnen wurden, man nicht auch andere von den umliegenden Stätten untersucht hätte, um wenigstens zur Gewissheit zu gelangen dass dort nichts zu erbeuten sei."



side the supporting wall), where he seems to have struck one of the earliest layers. For here they "came upon a spot close to the entrance, where there were a few isolated graves. They appeared to have been made of porous stone, so that the sides of these shaft-tombs crumbled away on the spot, and were dissolved into a yellowish earth, in which were found several vases, most of them undecorated, of common workmanship and form."<sup>1</sup> Manifestly these (in continuation of the region outside the earliest *peribolus*-wall) were small, rude shaft-tombs of the Salaminian order, such as we found at the south slope, and in which were the early vases with "dull-colored" ornament. Here, or near it, he came also upon the early vases, figurines, bronze pins (*Nägels*), etc., which made up our black layer.

All in all, Rangabé appears to have found 552 separate objects. Bursian<sup>2</sup> tells us of 550 "architectural and glyptic objects." But he is evidently inaccurate, as Rangabé gives a classified list of the various objects found, adding "numerous vase-fragments, pieces of iron, and of bronze."

The most important objects found were no doubt the fragments of marble sculpture, of which (evidently counting even the smallest chip) he counts 375. Among these are 114 fragments of legs and feet and 160 fragments of drapery. Not all of these have been preserved. The only complete piece he refers to is the female metope head here embodied among ours (PLATE XXXII.). "None of them," he says,<sup>3</sup> "is complete, and as they are of different dimensions, some life-size, some colossal, and others, again, and these form the greater number, under life-size, it is impossible to determine whether, or if so, which belong to single statues (perhaps to those of the priestesses), and which to pedimental figures or other ornaments of the temple." They were chiefly found at the *pronaos* and the northern side, where he excavated.<sup>4</sup>

The evidence of our own excavations and, in the light of these, the account which Rangabé and Bursian themselves give show that their excavation does not deserve this name in the full and modern acceptance of that term. I do not say this in a spirit which ignores the high-minded enthusiasm of these scholars, who labored under the great difficulties of such restricted means at that imperfect stage of the "art" of excavating. But it is for truth's sake necessary to say that the work of 1854 consisted in mere scratching of the surface and digging of a few trial trenches. The fact of their being hitherto quoted as "excavations of the Heraeum" led many, ourselves included, to assume that nothing more was to be found; and it was only when we were brought face to face with the actual site, and were impressed with the promise of the soil as it appeared on the surface and the few indications of walls, that Mr. Brownson and I agreed in 1891 as to the desirability — nay, necessity — of completing the work of Rangabé.

I should, in fine, like to quote the remarks of a Cambridge scholar, W. G. Clark, whose work was published in 1858,<sup>5</sup> but who visited the site in 1854 while Rangabé was excavating, and I shall give the passage relating to the Heraeum more fully, as his remarks in general, and especially those on "Prosymna," seem to me so cogent and interesting.

<sup>1</sup> *Op. cit.* p. 20, "Einer von diesen Gräben führte zu einer Stelle hart am Eingang, wo einige isolirte Gräber waren. Sie scheinen aus porösem Stein bestanden zu haben, so dass ihre Seiten auf der Stelle verfault, sich in eine gelbliche Erde aufgelöst haben, worin sich einige Vasen, die meisten unverziert, von gewöhnlicher Arbeit und Form vorgefunden haben."

<sup>2</sup> *Bulletini dell. Inst. di Corresp. Arch. Rome, 1854*, p. xvi, "Tutti questi oggetti con tutti i rimasugli architettonici e glittici (essendo questi ultimi 550, . . . etc.)."

<sup>3</sup> *Ausgrabung, etc.*, p. 23.

<sup>4</sup> *Op. cit.* pp. 18 and 19.

<sup>5</sup> *Peloponnesus*, London, 1858, pp. 83 ff.



"The ancient Heraeum was a fortress as well as a city. The position combining natural strength with a copious water-supply so far resembles that of Mycenae, but differs from it inasmuch as it stands out on a projecting spur, instead of nestling in a recess of the mountain chain. . . .

"Recent excavations — still in progress when we were there — have laid bare parts of the foundations of the temple, so as to leave no doubt as to its exact site, but bringing nothing to light by which the dimensions could be estimated with anything like certainty. The complete disappearance of the building at so great a distance from any town seems to prove that its materials were convertible into lime. If it had been built of marble, Pausanias would probably have said so; moreover, in another place (VIII. 41) he says that no temple in the Peloponnese, except that of Tegea, surpassed in beauty of material that at Bassae, which we know from its remains to have been built of limestone. The Heraeum was therefore, in all probability, of limestone too, always excepting the decorative sculpture in the frieze and pediments. Immediately in front were a flight of steps, and perhaps propylaea, fronting the road to Argos, and from which a path led to the right to a lower terrace, intended probably for the abode of the servants of the temple. . . . Immediately above the site of the temple just described is a polygonal wall supporting the highest terrace of all; on which, no doubt, the more ancient temple stood, though not a vestige now remains. Some religious scruple seems to have prevented the Argives from meddling with the relics of the first temple. It was originally built on the lonely hill, perhaps as a common holy place for all the inhabitants of the Argive plain, and a peculiar sanctity attached to it on account of its immemorial antiquity. The Argives, and probably the other communities, so long as they retained their independence, dated the public acts according to the year of the priestess of Hera. Thucydides, evidently expecting that his work would be known and read in the Peloponnese, gives the date of the commencement of the war, according to the Argive calendar, "when Chryseis was in the forty-eighth year of the priesthood" (Thuc. II. 2). The accident to the temple occurred eight years and a half afterwards (IV. 133).

"The excavations undertaken by the government had been much talked of, and their results vaunted even in the English papers. We were very much disappointed with what we saw collected at Argos. Some shelves in a little room contained the whole — a few small fragments. There was one beautiful female head with the hair in a band gathered in a knot behind, and also some feet and hands of marble. There was a fragment of a frieze with the honeysuckle ornament painted pale yellow on a black ground, with red in the centre. There was a lion's head with open mouth, which must have been a gargoyle, and a piece of moulding of which the ornament represented a buckle and tongue. I do not know the architectural name [egg and dart]. . . .

"All the district comprehended under these three names was probably destined for the support of the temple and its ministers. . . . I find, from another passage in the same writer (Paus. II. 37. 1), that Prosymna was one of the titles under which Demeter was worshiped by the Argives. I conclude, therefore, that it was some provincial name for arable land, as the lowest part of the mountain is. There is perhaps no trade or art, besides agriculture, which so abounds in local and provincial terms not generally understood. Farmers and laborers travel less out of their own neighborhood and their own class than any other people."

From 1854 to 1892 no attempts were made to explore this important site. During these thirty-eight years, time had done its work, and had obliterated all traces of previous excavations. No doubt the inhabitants of the neighboring villages had continued the practice of previous centuries (a practice we found it difficult to prevent even during our excavations) of carrying off portable stones for building material.

#### EXCAVATIONS BY THE AMERICAN SCHOOL AT ATHENS.

In 1891 I wrote to the Managing Committee of the School of Athens as follows : —

"I have succeeded in obtaining from the Greek government a concession (which will have to be confirmed by the Chamber) of the right to excavate for seven years on two sites to be chosen by



FIG. 36. — THE SECOND TEMPLE PLATFORM BEFORE EXCAVATION.

me out of five which I suggested. In order to decide upon this choice, I left Athens on April 1, accompanied by Mr. Brownson, and examined the site of the Heraeum of Argos and Argos itself, Tegea, Sparta, Messene, and Elis. I was told of difficulties which might arise in the expropriation of private property at Sparta, but I have convinced myself on the spot that these will not be serious; while, on the other hand, from the nature of the soil, as well as from the indications of what has already been found there, I am bound to consider Sparta one of the most hopeful sites in Greece. With regard to the other sites, the difficulty lies in choosing between Messene and Elis. Elis is *a priori* the most promising, but Messene seems from the configuration of the soil to be preferable. Near the village of Mavromati, within the city walls, it appears that the ancient Agora is well covered with a thick layer of soil washed down by the stream from the hill of Ithome. Elis also looks well, but bears traces of frequent devastation. On the whole I find it difficult to decide between these two sites, one of which, certainly, we should choose. If I should ultimately succeed in gaining the concession, I propose to begin early next season to dig at Eretria and at the Heraeum of Argos, where the excavations of Bursian and Rangabé, many years ago, certainly require completion. Later in the season, Sparta should be tried, and either Messene or Elis.”<sup>1</sup>

In 1892, after the work was fairly begun at the Heraeum, I began explorative excavations at Sparta, assisted by Mr. Meader, the results of which have since been published.<sup>2</sup>

When we began our work at the Heraeum, the site was clearly marked by the Cyclopean supporting wall of the Older Temple, some traces of the supporting wall of the second platform at the east and southeast ends, and some traces of the wall at the southern

<sup>1</sup> See *Tenth Annual Report of the Managing Committee of the American School of Classical Studies at Athens, 1890-91*, pp. 29 ff. (Director's Report).

<sup>2</sup> *Am. Journ. Arch.* VIII. (1893), pp. 410-428; cf. *Eleventh Annual Report of the Managing Committee, etc.* (Director's Report), p. 31.



end of the Lower Stoa. The rude square turret-shaped wall at the southeast end of the second platform was so clearly manifest that, after digging in the interior of this square tower, I at once erected a *Phylakeion* (XI on the Plan) over this to contain our tools and give some shelter against the sun during our midday recess. This was the only spot where I could predict that no further excavations would be needed. From the report to the committee quoted above, it will be seen that I did not expect to find so large a site and so many buildings. The fact that previous "excavations" had been conducted, and the reference of Pausanias to only one building, the Second Temple, and to the burnt ruins of another, the older temple, naturally led me to suppose that we had only to clear away the surface of the temple, to explore the Old Temple platform, and to make out the meaning of the isolated walls to the southwest, in order to complete our excavation of the site and to supplement the imperfect work done in previous years.

Instead of this we have found nine separate buildings, each of considerable dimensions

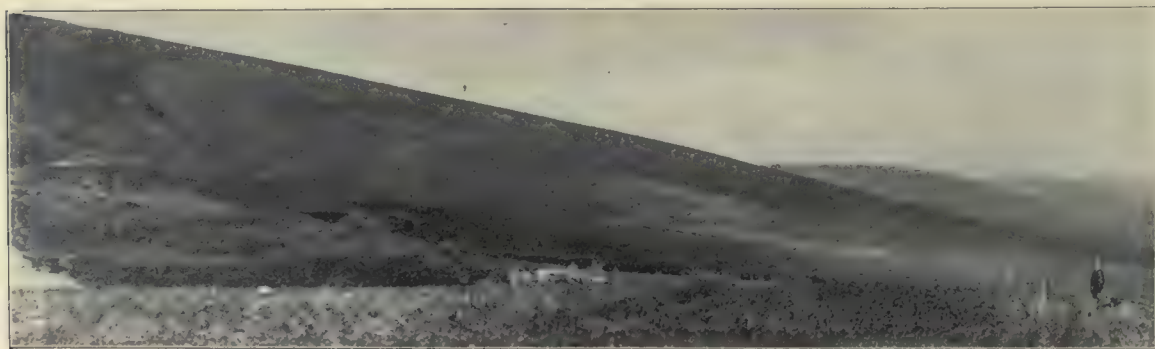


FIG. 37. — SITE OF THE OLD TEMPLE PLATFORM BEFORE EXCAVATION.

and importance, and remains of several other structures and walls. Moreover, the work done at the two temples could only be termed "scratching" the surface, and the system of going to the lowest depths, to bed-rock, on these sites has been proved by our finds to be one of the first principles of excavation.

When we began our work, in 1892, there were no indications of ancient remains beyond those mentioned above. The Second Temple platform (Fig. 36) was nothing but a rough, stony, ploughed field, and the upper terrace as well as all the other parts of the sanctuary presented the same aspect (Fig. 37).

I have given a fuller account of our first year's work in a separate publication.<sup>1</sup> Dr. Brownson has also written special papers on the results of that year's digging in the *American Journal of Archaeology* (Vol. VIII. [1893], pp. 205 ff.). Mr. Fox's excellent plans of the excavations in that year will be found in the *Twelfth Annual Report* of the School. These papers and works have been reprinted in the *Papers of the American School at Athens*, Vol. VI. But in attempting to give a short history of the excavations themselves during our four successive campaigns, I will here quote from my Reports to the Committee of the American School, written towards the close of the excavations in 1892, and of each succeeding year.

<sup>1</sup> *Excavations of the American School at the Heraion of Argos, 1892.*

## CAMPAIGN OF 1892.

"On February 13 I started for Argos, accompanied by Mr. Brownson and Mr. Fox. Before we began active work we were joined by Mr. De Cou and Dr. Newhall. On March 4 Professor Poland also joined us, and took charge of the work for a week, during which time I accompanied Mr. Washington to Phlius, and then returned to Athens. To the hearty coöperation of all these gentlemen the success of our work is largely due.

"We began our work at the Heraeum in an explorative manner, to test the nature of the several sites there grouped. At first we employed sixty-three men and three carts, and rose to one hundred and eighty men and twenty-six carts. We were exceptionally favored by good weather; in the first month we lost only one half-day from bad weather. Our chief energies were concentrated on the Second Temple (Fig. 38); but we dug trenches also on the site of the earlier temple, where



FIG. 38.—THE SECOND TEMPLE AT THE CLOSE OF THE SEASON OF 1892.

we came upon its pavement, consisting of flat polygonal stones, and also upon a continuous layer of charred wood,—an interesting confirmation of the record of the burning of the temple. We found ruins of what may prove to be early Greek baths, and of a stoa. At a depth of between ten and fifteen feet, on the slope at the west end of the Second Temple, we came upon a curious layer of black earth, in which we found a great number of archaic bronze objects, amber beads, some gold and silver rings, terra-cotta ornaments, fragments of early vases, bone needles, stone seals, etc. The terra-cotta plaques are almost unique in character, while the vases make a valuable addition to our knowledge of early ornamental ceramic art.

"We were fortunate enough to find a large number of the marble sculptured ornaments of the Second Temple in a more or less fragmentary condition. . . . We were still more fortunate in discovering two well-preserved heads, about two thirds life-size, which belonged to the metopes, and also a well-preserved male torso from one of the metopes. Finally, immediately in front of the west end of the temple, we had the great fortune of finding the marble head of Hera, of which you have already heard. This head, of at least life-size, is recognized by all who have seen it as the best preserved specimen of a female head from the fifth century B. C." . . .



## CAMPAIGN OF 1893.

"In our second campaign, in 1893, I was assisted by Messrs. Lythgoe, Meader, and Norton, who took part in the excavation from the beginning to the end, and had each charge of definite portions of the site as responsible overseers and directors of the workmen under their command. These gentlemen, with Dr. Washington, remained on the site, and continued the excavations for several days after I was forced to leave, and during these days some of the most interesting objects of sculpture were found. . . .

"We pitched our camp on the rocky elevation above the Older Temple on March 30, the Greek government having kindly lent us three good tents from their army stores. The experiment of camping on the site itself has proved a great success, and one which it would be well to adopt in the future. We at once engaged workmen, and were enabled to start the next day with 112 men and 23 carts. On April 1, we had 130 men and 30 carts; on April 3, 200 men and 38 carts. Our force at last reached the number of 240 men. We began to excavate on the upper plateau, the site of the Older Temple. . . . We cleared off all the top soil down to the early substructure, about 45 metres in length by 35 metres in breadth. The burnt layer alluded to in my report of last year again appeared on various portions of this site, together with masses of *poros* stone, which had evidently been split into smaller pieces by the heat of a great conflagration. We were fortunate enough to find still standing on this terrace a portion of the early wall, about 14.30 metres in length by a little over a metre in width, which certainly must have belonged to this interesting structure, perhaps the earliest temple of Hellas. The presence of this piece of wall may prove of exceptional importance, inasmuch as its lower portion was evidently not visible at the time the temple was completed, and the objects found below this line would thus antedate the erection of the temple. Two other stones appear to be *in situ*. But it is impossible at this moment to hazard even a suggestion with regard to the construction of the early temple. At all events, we have cleared this important site, and it is now in a state to be carefully studied for the light it may throw upon the earliest history of civilization in Greece. The yield in objects of early ceramic art, some bronzes and peculiar rude engraved stones, was very rich, and of extreme importance and interest. I have little doubt that these finds alone are of sufficient weight to justify the energy and money expended upon the undertaking, as they are sure to throw most valuable light on the history of the earliest art in Greece. We dug two broad trenches outside the Cyclopean wall to the east and west of the plateau, in order to make sure whether there were any objects of interest which had fallen over the supporting walls.

"When the work on the platform of the Old Temple was completed, we made the slope from the upper terrace down to the terrace of the Second Temple the centre of our exertions (Fig. 39). It was exceedingly difficult to excavate on this site, because the existence of buildings at the immediate foot of the slope had already been proved by our discovery last year of the outer line of the Stoa (II). We had therefore to work with great care from above, immediately below the Cyclopean wall of the upper terrace, and had to construct a steep road leading from the point marked T to the top of the slope, dumping our earth either at the southeast dump or at the southwest dump. When we had dug several feet below the Cyclopean wall, we at once came upon very rich layers of early pottery of all descriptions, and soon found various vestiges of buildings. These were erected on the height above the buildings corresponding to the North Stoa, and immediately below the Cyclopean wall. They consisted of portions of walls built of loose unhewn stones placed together without mortar or clamps, and evidently formed the smaller, perhaps domestic, counterpart to the structures known as Cyclopean walls. The objects found in some of these make it not improbable that they may have been the houses in which dwelt the priestesses or attendants of the earlier temple, though I should not venture upon any hypothesis at this moment with any claim to your serious consideration. There are also traces of a rough pavement sloping downwards from about the middle of the Cyclopean wall (below it) to the west, and behind the back wall of Stoa II. This may have been an early road leading up to these dwellings. With due care to preserve the remains of these early buildings, we dug down to the bed-rock on this slope; and then came the task of clearing the whole series of buildings on a line with the Stoa. The length of these



structures is about 100 metres, with an average depth or width (including the back walls) of about 10 metres.

"Of Stoa II. merely the outer stylobate had been discovered last year. Behind this, the inner colonnade measures 8.65 metres, and is backed by a wall of over one metre in width, which is built against the slope. There were at least nineteen pillars running along the centre of this stoa. Some of the pillars were found *in situ*. There is also an interesting system of drains and water-works attached to this building, with some curious structures within it, which, however, are probably of a later date. But I do not think that this can be assumed of a curious structure towards the northeast corner of the east end of the Stoa as excavated last year; it is a depressed flat cemented surface, 3.80 metres in length by three metres wide, reminding us of the Bath of Tiryns, and probably serving the same purpose. The Stoa (II) runs, from a few metres to the east of the east end discovered last year, for 55.52 metres to the west, ending about on a line with the east end of the Second Temple. A more intricate building was discovered to the east of the Stoa, extending farther east than the eastern limit of the Cyclopean wall of the upper terrace (III). The original structure, of which much is still standing, was evidently rebuilt at a later period: and the stone inscribed with ΔΙΦΟΝΥΣΙΟ (i. e. Διφονύσιον, containing, as you see, a digamma) was evidently immured at a later period. . . .



FIG. 39. — WORK ON THE SLOPE BETWEEN THE OLD TEMPLE AND THE SECOND TEMPLE, IN THE SECOND SEASON.

"Besides a rich find in pottery, terra-cotta, bronzes, and smaller objects (among which I must mention a later clay lamp containing the figure of the Polycleitan Doryphorus), this building yielded a beautiful torso of a draped female figure, probably from the metopes of the temple, three fine marble heads, and many other fragments.

"Together with this work at the northeast portion of the second platform, extensive excavations were carried on at the southeast corner. The ground to the east and north of the *Phylakeion* (XI) was leveled; while to the outside of the eastern terrace wall the trench was continued, and interesting walls or steps were laid bare as far as the dump. Both these points yielded a very rich harvest of ceramic and bronze works, engraved gems, and glass scarabs. . . .

"South of the foundation walls of the Second Temple, the whole ground was cut away at the level of last year's deep cutting at the southwest angle of the temple. Below and slightly to the west of the house (F) a deep and wide trench was cut. In all these cases we came upon layers that antedated the construction of the Second Temple, as was shown by the archaic objects found.

"I also tested the ground at the foot of the hill to the south and southwest of the steps (I), and was pleased to find that we soon came upon native rock. It was thus possible to dig upwards from below and to avoid a distant transportation of the earth. We had merely to dig up the earth until we had reached virgin soil, and to shovel it back upon the lower rock-bed. In this manner we cleared the slope up to the steps (I) which were found last year.

"Perhaps the most interesting portion of this year's work will prove to be the excavations at the southwest platform below the Second Temple. I began by cutting a trench at the southwest corner of the old retaining wall, running from west to east. I soon came upon a wall of beautiful Greek masonry (Fig. 40), of which four courses of well-cut blocks were still standing. We carried this trench on as far as the continuation of the retaining wall at the east of last year's deep



cutting. We then worked northwards. Messrs. Washington and Norton continued the work after my departure, with the result that two sides (and the interior inclosed within them) of a very interesting building have been unearthed, with walls, and column-bases *in situ*, the whole presenting a very interesting ground plan. This building we call the West Building (Fig. 41). Below the south wall of this building we also excavated as far as the most western of the broad cuttings on the south slope below the temple marked N on last year's map. Immediately in front of this wall (south wall of West Building) large portions of the entablature of a Doric building were found, upon which were distinct traces of color, — reds, blues, greens, etc. After my departure other polychrome pieces were found.

"Besides interesting smaller objects from this site, a number of fragments of marble sculptures, evidently coming from the Second Temple and forming parts of the metopes, and I believe also of the pediments, were found. I must also add that among the heads discovered, one head (probably from a metope) is in excellent preservation, and very nearly equals in beauty the head of Hera found last year; while the torso of a draped female figure from the metopes forms a fitting counterpart to the torso of the nude warrior of last year's metope." . . .

#### CAMPAIGN OF 1894.

"The third campaign was begun on March 21, 1894. The regular staff consisted, besides myself, of Dr. Washington and Mr. Norton, and of Messrs. Hoppin and Alden, students of the School. All the members and students of the School were invited to stay for a few days in the

camp, in order to study and gain experience in excavations as such. Of this invitation, Messrs. Parsons, Fallis, and Hill availed themselves; while the other students, though they were prevented from staying with us owing to their travels with Dr. Dörpfeld, saw the excavations on the occasion of the visit which Dr. Dörpfeld and his party paid us. My colleague, Professor Richardson, paid us two visits, during one of which he remained with us over a week. Professor White was also our guest, though I am afraid he will not consider it an hospitable camp in which we allowed the storm to carry away his tent in the middle of the night. We had many other visitors of all nationalities. Among our American visitors, ladies and gentlemen, I must single out Mr. Edward Robinson, of the Boston Museum of Fine Arts; and Mr. Thayer, of Boston, who, on the spot, contributed one hundred dollars to the fund of excavation. Dr. Dörpfeld made the Heraeum a point for one of his instructive lectures during his Peloponnesian tour. With him were a number of distinguished scholars, among them Professors Loeschke, Wecklein, and Fränkel. Dr. Dörpfeld and Professor Loeschke joined Professor White in staying in our camp the night of their visit. We also had a visit from Mr. Kabbadias, the Ephor-General of



FIG. 40. — PIECE OF WALL FROM WEST BUILDING,  
FIRST APPEARANCE.

Antiquities, who was our guest for a day and night. . . . The British Minister, Mr. Egerton, also paid us a visit. The School must also feel honored by a second instance of the interest which



the Royal Family of Greece has shown in our work. The King and Queen, the Crown Prince and Crown Princess, and Princess Mary, with their suite, made our excavations the object of a special journey. It was the first time they had visited an excavation away from Athens. They remained with us over five hours, and manifested the keenest interest in the progress of the work.

"Our camp was pitched on the same site as last year, the government providing us with five tents, while I had ordered a sixth from England, provided with a double fly, which experience had shown me was absolutely necessary as a refuge against the sun in the heat of the day. This tent, together with the tools and instruments we have accumulated, will form a useful addition to the School's apparatus for exploration and excavation in future years.

"Our party arrived at Argos on March 21, and we were able to begin work with one hundred and eighty-five men and twenty-six carts on March 22. The following day we worked with two hundred and fifty men and thirty carts, below which number we did not fall, increasing our corps to two hundred and seventy men.

"The first task we had set ourselves was to complete the clearing of the whole east side of the second platform (Fig. 41). We thus had to cut away the hillside to the east of the buildings we had found last year, which are now called the East Chambers, in which was the inscription ΔΙΦΟΝΥΣΙΟ. We carried this cutting about twenty feet in depth to a length of ninety feet, to the old wall marked T in the map. This was very difficult digging, inasmuch as there were huge blocks, imbedded at every stage, which had fallen from above, while below we came upon complicated early walls of different periods, which had to be spared and carefully cleared. The nature and purpose of these will require careful study. Backing the slope, and acting as a supporting wall to the upper terrace, below and to the east of the great Cyclopean wall of the upper terrace, another Cyclopean wall runs for about eight feet, when it ends abruptly, lines of sloping rubbish clearly showing in the cutting how the earth had drifted over this end for ages.

"Below and partly underneath this Cyclopean wall, there were large masses of pottery, iron, bronze, and smaller objects, the majority belonging to the 'Dipylon' and Mycenaean periods. Farther to the south there were deposits of rubbish which evidently dated from a period of destruction in later years, as we here also found a marble head of the Roman period. Here it was that we found also, in beautiful preservation, an interesting specimen of Greek sculpture, a head of an ephēbus from the metopes of the Second Temple. The head is in excellent preservation, even the tip of the nose being intact. This head bears beyond a doubt, in my mind, the characteristics of Polycleitan art as hitherto known to us. There is the same square and massive proportion of the head as a whole, the heavy treatment of the jaws and chin, that we find in the head of the Naples Doryphorus, — in fact, it seems to me to be a reproduction of the type of the Doryphorus in the style of these metopes. Moreover, it will interest you to hear that, in spite of some mutual divergences, this head has, in common with all the others which we have found on this site, some peculiarities of treatment, such as the slightly opened mouth and peculiar protrusion and curving of the under lip. I do not wish to convey the idea that I claim this or any of the other heads as work by the hand of Polycleitus, but I maintain that they bear out in their general character and in details of work the natural expectation that the sculptures which decorated the second Heraeum of Argos would be related to the art of the sculptor Polycleitus, who created the temple-statue of Hera in this sanctuary, as Phidias created the Athena in the Parthenon, and who, like the great Attic sculptor, was the inspiring head of a thriving school of sculpture in his own locality.

"Among the many objects found here, I must mention the large number of objects in iron. In fact, throughout our excavations we have often found iron together with bronze and even stone implements. A strange object was a large mass of iron about five feet long and a foot in diameter, which proved to be a mass of iron spears bound together with bands of iron at both ends. We found at the same place another large, solid, rectangular bar of iron, flattened out about a foot from one end, which is quite inexplicable.

"At the easternmost angle of the terrace of the Second Temple, above the retaining wall W, to the north of the dump S, another building was discovered, which we have named the East Building (to distinguish it from the East Chambers). This building, supported by strong walls on south and east, built against the hill-slope, has on the north side a wall of *poros* strengthened



by a limestone wall. The bases of three rows of five columns are extant in the interior, while at the west front (facing the temple) it had a portico. In this building numerous objects in gold, silver, bronze, and terra-cotta were found, as well as a scarab with a cartouche, probably of Thothmes III.

"We also cleared away all the earth remaining to the east of the temple, and to the west of the dump S, without finding much there.

"We then turned to the west and south slopes of the terrace, — the main points of this year's excavations (Fig. 42).

"The larger portion of the West Building, which lies below the west end of the Second Temple, about twenty-five to thirty feet below the top of the foundation walls of the temple, was excavated last year. We now cleared the north end, where the space for the building has been cut out of the rock which rises at the north end. We here found three chambers which communicate with the colonnade and central court. The whole is a very interesting building, the purpose of which (whether gymnasium, treasury, or combination of buildings) I do not venture to decide at present. It is a building about one hundred feet (33 metres) by ninety-three (30 metres), consisting of a colonnade surrounding an open court in the centre, while to the north it is flanked by the three



FIG. 41. — CORNER OF THE SECOND PLATFORM, WITH FRONT OF EAST BUILDING IN RIGHT FOREGROUND.

chambers running from east to west. It appears to be older than the Second Temple, not later than the first half of the fifth century B. C. Here, as in the Upper Stoa, there are drums of columns *in situ*, besides the pillar bases, and in some places several layers of the stone walls. In this building there were numerous fragments of the architectural decorations, as well as fragments of sculpture and smaller objects.

"We also cleared the ground to the north of this building to the bed-rock, and at the western point, to the south of the dump S, we again came upon ruins of interesting buildings. Above the old supporting walls is the building which we call the Northwest Building. It was difficult digging, since here too we found intricate walls, and it required Mr. Hoppin's best attention to carry on the work which was placed in his charge. However, the plan was finally worked out with clearness, and shows a long building (31 metres long by 11.40 wide) of early structure. In digging here we turned up some fragments which had fallen down from the Second Temple: the face of a colossal female head, bronze and terra-cotta cows' heads, objects in gold and silver (among them a silver ring studded with gold and inscribed), etc. This building may be connected with the traces of the building in the field below, which in the first year we thought might be Roman.



"On the south slope below the Second Temple, we began on the same system we had previously adopted, working at the bottom of the hill below, and to the east and west of the steps (I). Finding bed-rock, we had merely to turn over the earth as we advanced upwards, and ultimately we were enabled to turn the whole of the part to the south of the steps (I) into a large dump for all the mass of earth we had to cut away between the Second Temple and these steps. We found a thick wall running from east to west at a depth of over fifteen feet below last year's surface on the south of the second plateau, and upon this abutted the beautiful limestone wall which we found projecting southward last year from the southeast corner of the West Building. This limestone wall must have formed part of the west front of the great building which we are now excavating on the south slope. About ninety feet of this building, with pillar bases, upon some of which drums are *in situ*, have already been laid bare; and we shall have to continue to carry away the great mass of earth which covers this building along the whole south slope. I have no doubt that it will prove to have been a very important and imposing structure. In the mass of earth which covers it, we have found fragments of masonry from the Second Temple: large drums from the columns, as well as complete Doric capitals, also two torsos of sculpture, and many fragments belonging to the metopes of the Second Temple. At the same time, another large gang of workmen was engaged in cutting away the south slope towards the east, in the region below the house (F), and we are thus working from both sides to clear away the accumulated earth, while we are making a continuous terrace of the dump below the stairs (I). When the excavations are completed, there will thus be a continuous series of interesting buildings running from the foot of the hill upwards, tier upon tier, to the terrace of the first temple on the summit. With the completion of this part of our work, as well as with the thorough investigation of the regions about the Lower Stoa (CC, J, K, and L), which are bounded by the river, the whole site will have been thoroughly investigated. I must also remark that behind the *poros* supporting wall, running from north to south at the east of the West Building, we have found rich layers of early antiquities corresponding to the 'black layer' we found in the first year. In fact, it appears to me that this layer is continuous with the one found in the first year, the objects being arrested by the retaining wall. Considering the variety and number of objects found here, it would be impossible for me to give any adequate idea of the richness of our find. They comprise every material, from a beautiful large solid gold pin to objects in lead, iron, bone, ivory, and clay, and touch upon every field, — epigraphy as well as art, mythology, and antiquities. We have brought to Athens over eighty baskets full of objects of this kind, together with larger fragments of marble sculpture, cornices in stone and terra-cotta. A curious and interesting discovery was made to the north of the back wall of the building on the south slope, at some depth below what was the original ancient surface. There were found some early graves of the Mycenaean period, such as have been recently found at Salamis. One of these was well preserved, — a small shaft-tomb containing the bones of the deceased, and several vases in perfect preservation, of the earliest Mycenaean type. They evidently belong to a period when the *temenos* of the early temple of Hera was limited by the upper terrace, and the region of these graves must have been quite outside the *peribolus* wall.

"The climax of our good fortune was reached when, a few days before the close of this campaign, we found, what for several years we had been seeking in vain: namely, the beehive tombs of the Mycenaean period. The first is about three hundred yards to the northwest of the temple, beyond the Eleutherion; the second, only about sixty yards to the northwest of the Eleutherion. They are both of the beehive shape, cut into the rock, without interior masonry, — the approach being by the narrow *dromos* which leads into the underground door, which after the burial was blocked by means of large stones. The interior is circular, the diameter being about 2.46 metres, the height being 3.38 metres. The first of these tombs, discovered on April 20, was the repository for at least three corpses, and may have contained more. The dead were certainly not laid out in the tomb, as the bones were found massed together without any anatomical relation to one another. The finds in the first tomb were exceedingly rich. It contained forty-nine vases, nearly all in perfect preservation, three terra-cotta figurines of the earliest type, one chair with interesting Mycenaean ornaments, one engraved stone of the 'Island' type, four steatite whorls, one ivory needle, and a number of beads. The second tomb contained a large number of beads and whorls, but only



one complete vase and a number of fragments. These finds appear to me of exceeding interest and importance with regard to early Mycenaean pottery; and the interest of the discovery may be increased by the fact that the sun shone into the opening which had been broken into the top of the rock, so that we were able to take photographs of the vases and bones *in situ*. . . .

"The last campaign was begun on March 22, 1895. As I was kept at Rome on my way here by an attack of influenza, I telegraphed to Mr. Hoppin to begin work according to the plan we had arranged before he left for Greece. Accordingly, on March 22, Mr. Hoppin began to excavate the south slope below the Second Temple at the point at which we had left it last season, and thus had charge of the work for several days before I arrived. During these days Mr. Hoppin was not only able to make most valuable discoveries, such as the two best preserved metope heads, but he pushed on the clearing of the South Stoa for many feet, having to clear away about twenty feet of superimposed earth for the whole length and width of the stoa. He has since proved a most efficient aid to me, and with his two years' experience in excavation, as well as his archaeological studies in German universities, he is likely to become a well-equipped archaeologist. I am much gratified to hear from him that he intends to spend the winter and spring of the two coming years at Athens to arrange and elaborate our finds from the Heraeum. In this task he will be



FIG. 42. — THE ROMAN BUILDING, WITH SOUTHWEST STOA ON THE LEFT, AND PORTION OF WEST BUILDING IN THE FOREGROUND.

aided by Mr. Heermance from Yale University, who joined Mr. Hoppin at the beginning of our work this year, and was with us for several weeks, until he went with Dr. Dörpfeld's party on the Peloponnesian tour. I venture to predict that he also will be of the greatest help in arranging and working out our finds, while he himself will gain much experience and valuable information in performing this task. Mr. Rogers, of Columbia College, New York, has been with us for several weeks now, and is taking charge of all the work on the west side. He will remain till the campaign is ended, and will undoubtedly be of great assistance to us. . . .

"I owe the Committee a great debt of gratitude for the wisdom with which they have selected an architect to assist us in our work here, and to prepare plans and drawings of the excavations. Mr. Tilton has taken up his work with such energy and intelligence that we may hope for an adequate,



perhaps a brilliant, presentation of the architectural side of our publication. Mr. Tilton purposes to remain here for a week after the excavations are closed, to supervise the cleaning of the buildings, with about ten workmen. Mr. Rogers has promised to join him during this period. In the course of the summer Mr. Tilton intends to meet me in England, in order that we may discuss and decide upon the general plan, as well as the details, of the architectural publication.

"The work we have this year done on the south slope (below the Second Temple) appears to me, as I see it now, astonishing with regard to the amount of earth that has been removed. This would not have been possible, had we not at the beginning of last season found bed-rock at the



FIG. 43. — FIRST TRENCH DUG AT SOUTH STOA.

bottom of the little valley and for some way up, so that we could place a continuous dump half way up the hill on the south slope. Our carts had thus to travel but a short distance before our eyes, and we could make a continuous dump below the line of building found on the south slope.

"At the close of the last season we had found the beginning of a building, one side of which abutted on the southeast corner of what we have hitherto called the West Building, and which ran from east to west along the south slope about forty feet below the top of the foundation wall of the Second Temple, and parallel to it. We had also cut in for about ten feet behind the supporting wall east of the West Building, which separates this building from the Second Temple above it. We now continued to clear out this South Stoa (Fig. 43). It was difficult digging, as there was an average of twenty feet of earth to be removed for its whole length, and large stones, drums of columns, capitals, and blocks had fallen from the terrace above, all of which had to be removed to the nearest point where they would not block the way for excavation, and carefully deposited there. As I am now writing the building is quite clear (Fig. 44). It is a beautiful stoa, imposing in its vast length, with walls of most perfect Greek masonry, of which four and even five layers are standing all around. Within there are nine Doric pillars. All the pillar bases are *in situ*; three have the lower drum, while one has two drums, — the remaining four, together with the capital in good preservation, having fallen immediately in front of this. At the back wall (north) there are well-worked pilasters, one to each alternate pillar. The stoa is about forty-five metres long by about thirteen metres wide. It faces towards the south (i. e. towards Argos), and is approached by a continuous flight of steps. The temple above it must have fallen in before this stoa was destroyed,





FIG. 44.—SOUTH STOA, AFTER EXCAVATION.

since, especially in the western half, we found huge drums of the column from the temple which had crashed through the roof, with *geison* blocks, and, fortunately for us, also metopes and *sima*. The flooring was thus in parts littered with fragments of marble from roof tiles and metopes. Among these were several pieces of sculptured metopes, and of the *sima*, fragments of arms, legs, torsos of bodies, etc., all from the high relief of the metopes, and two well-preserved heads (one quite perfect), with portions of three others. This stoa is perhaps the best preserved of all the buildings which we have found, and is certainly one of the most imposing I know in Greece.

“We also cut into the slope to the west of this stoa, but were soon convinced that no ancient building stood here; we found, however, the traces of a huge staircase which covered the whole slope on this side leading up to the great platform of the temple. There was thus on the south side of the temples facing Argos a magnificent approach to the sanctuary; and it is interesting to note that the line of buildings and the access to them belonging to this period face to the south and east, while the earlier buildings are massed on the west side. This corresponds to the change from the Mycenaean to the Argive supremacy.

“At the close of the last season, we had cut off the slope evenly behind the back wall of that portion of the stoa which was then discovered. It was a huge cutting. Upon arriving this spring, I found that the rain had washed away some of the earth from the side of the cutting, and here appeared a portion of a column-drum from the Second Temple. How this had fallen there it is difficult to explain. Reluctantly (for I knew there could be no building there), I felt bound to dig here again. We thus had to cut away further ten feet of earth to a depth of over twenty feet and for a length of forty-five metres. All this earth was filling for the foundations of the upper temple, and contained a great mass of pre-archaic Greek objects, such as we had found in previous years in this same filling. We also dug down to bed-rock for the whole length inside (to the east) of the supporting wall before the West Building (Fig. 45).

“Some interesting results appeared from this work. We were much astonished last year when Dr. Washington found in the corner behind this supporting wall and the back of the South Stoa wall Mycenaean graves such as have been found at Salamis. I could only explain this to myself by the supposition that this site was outside the earliest *peribolus*. We now found such early

walls of the Mycenaean period here, together with some such graves, and a great number of vases and small objects outside these early walls. Such walls also appeared on the whole west slope, north and northeast of the West Building, where Mr. Rogers had charge of the work, and where we have cleared the whole site down to bed-rock. We can now say with confidence that nothing remains unexcavated *within* the ancient *peribolus*.

"We have now attacked also the fields to the west and southwest, *outside* the *peribolus* walls, where in exploring during the first season we had traced a large stoa and conjectured that there was a Roman temple. This conjecture was a happy one in so far as in the field below, immediately to the west of the temple and bordered by the stream (Eleutherion) on its outer (northern and western) sides, we have found buildings of the Roman period, — an extensive and complex system of Roman baths. This is interesting also in its bearing upon the whole nature and function of the sanctuary.

"The other large field I shall excavate as far as possible, and shall especially do my best to enable our architect to make plans of the buildings.

"A few words about our finds. In this respect we have been as lucky as ever. I have already



FIG. 45. — WEST BUILDING (VII), AFTER EXCAVATION.

referred to the metope fragments and to the heads. These latter correspond to those we had already found and belong to the metopes. They are worked in a vigorous manner, and are still of such careful execution that I believe even those of the Parthenon can hardly rival them in this respect. One head of a youth with a helmet is in perfect preservation, even the tip of the nose remaining intact. We shall now have a large number of fragments at Athens, and we may hope to be able to piece some together. At all events the sculptures coming from this temple built by the Argive Eupolemus, with Polycleitus as the sculptor of the temple-statue, are among the most important specimens of the great art of the fifth century B. C.



"From the filling to the Second Temple we have about seventy-six baskets full of vases, terra-cottas, bronzes, etc. Though a great part of these came from the dry rubbish used to fill up the platform, I am more and more convinced that in the earlier periods there was some sacred building or great altar on the site of this temple. The early Mycenaean walls along the slopes belong to these, as well as most of the finds which were votive offerings. We have again found here a number of Egyptian objects, including several scarabs. I hope that a French Egyptologist, now sojourning at the French School, will be able to throw some light upon our Egyptian finds. Of smaller objects, gems, and terra-cottas, this year has given a very large harvest.

"We have found several inscriptions, — some of the Roman period; but the most important epigraphical find, perhaps, of the whole excavation, is a bronze plaque about eight inches square with eleven lines of boustrophedon inscription in the earliest Argive characters.

"Owing to the generosity of Mrs. J. W. Clark and of Mr. Hoppin, whose contributions (\$1200) have greatly increased the sums which I have received from the Institute (\$500) and from the School (\$250), as well as that in hand from last year (about \$650), we have been well supplied with means this year. I hope to have a considerable surplus. Since Mr. Hoppin has authorized me to use what remains of his and Mrs. Clark's contribution for the preparation of illustrations of our work, I have the photographer Merlin here now, who is taking views of the buildings and the sites, and I shall proceed to make arrangements with Mr. Tilton for the most adequate form of publication.

"It is rash to make promises. More than thirteen years passed before the Germans published the results of their excavations at Olympia; the vase fragments from the Acropolis, which have been in their hands for at least five years, are not yet published, and they tell me that their main difficulty now is to provide proper means of reproduction and publication. I shall do my best, and Mr. Tilton promises to use all his energies to assist me to put into the printer's hands the first volume, containing the introduction, the architecture, and possibly the sculpture, by the autumn of 1896.

"By next spring, after Mr. Hoppin and Mr. Heermance have worked at our finds during the winter, I may be able to make more definite proposals with regard to the other volume or volumes."

## NOTE A (See page 11).

IN this case, as in so many others when problems of ancient archaeology and history are concerned, it is important to consider the personal equation of the authors and the conditions and circumstances under which they wrote, before using or quoting passages from them, as historical or critical evidence. In this special case it is well to bear in mind that, of the two travelers, Pausanias has a bias in the direction of folk-lore and mythography, pervading and sometimes overpowering his antiquarian or archaeological interests; while Strabo is a geographer with a stronger historical bias, possessed of more sober and critical insight and a pronounced appreciation of literary tradition, the Homeric poems being to him the centre of literary importance. While we may often deplore the inaccuracy and credulity of Pausanias, or at least the inadequacy of his description of objects which to us are of supreme interest; while we are often impatient and irritated with him for his diffuse excursions into the regions of unprofitable hearsay, when he omits the mention or to describe most important facts and monuments, we must recognize that these very faults make him a most useful source of information to the student of folk-lore and mythology, and even to the historian who has to consider the local traditions and the earliest sources of information.

Strabo, on the other hand, clings to the historical facts before him, and probably draws much of his information from such writers as Ephorus; and when he goes beyond these he turns to literature, — the literature which he had before him, — and ignores folk-lore and tradition. To him Homer is not only the poet, ὁ ποιητής, but also the central repository of the earliest lore and the only source from which trustworthy information concerning the earliest history of the Hellenic land and Hellenic traditions can be had. Thus in common with writers of his own age, and with most scholars of our own times, he becomes in matters archaeological and historical a Homer worshiper. But we are now in a position to assert that, as regards the earliest history of Greek life and Greek religion, Homer himself becomes the more useful and instructive the more we supplement the Homeric poems by the records of local and popular traditions in word and stone. These are scattered through the authors and exhumed from the earth, they point to still earlier periods, and show the constitution of the material which the genius of the great epic poets has put into such splendid and monumental artistic order.

Thus it is that Strabo, who is fully informed with regard to the Mycenaean and Argive periods in the early history of the Heraeum and of the whole plain and country, is practically ignorant of or ignores the Tirynthian period. There are two main causes for this omission on his part.

(1) When he wrote about this district the city of Argos had a great history, and was thus naturally the centre on which he stood in order to focus and to observe the historical region which he attempted to explore critically. Mycenae was in time and space nearest to Argos, and he could follow more readily its destruction by the latter, and its previous hegemony. This led him as far back as the Homeric period, and here he stopped. Tiryns and Midea, on the other hand, were deserted<sup>1</sup> in his time, and seemed at best only to have been "fortresses,"<sup>2</sup> apparently as opposed to cities. He herein forgot that the early cities consisted both of such a fortress or citadel, built of more durable material, and of the town itself, built of perishable material, spreading round the foot of the citadel, such as the Hissarlik-Troy, the early Mycenae itself, and probably the early city of Argos.

(2) The second cause for the omission of Tiryns in Strabo's consideration of the historical phases of the Argive plain and the Heraeum lies in the fact that he restricted himself to Homeric evidence, and that, in his admirable attempt at a careful examination of the passages in Homer, he

<sup>1</sup> Strab. VIII. 6. 11. 373 ο ξρημος δ' ἐστὶ κάκεινη    <sup>2</sup> τῇ μὲν οὖν Τίρυνθι ὀρμητηρίῳ χρῆσασθαι δοκεῖ.  
[Tiryns] καὶ ἡ πλησίον Μιδέα.



is misled by the ambiguous use of the term "Argos." He himself felt, what has been felt often in the writing of this very book, that it is important and difficult to make clear whether one is using the term "Argos" to mean the district or country or the city. He labored under this difficulty himself at the outset of his description in the fifth chapter of the fifth book, and he carefully weighs Homer's use of the term to show that it was used, not only for the district, but also for the Peloponnesus, — nay, the whole of Hellas.<sup>1</sup> But he at once lapses into this error which he tries to avoid when, further on,<sup>2</sup> he says: "And I think that the reputation of this city brought it about that both Pelasgians and Danaans, as well as the Argives themselves, were named after it. And for that, the Greeks as well." And a few lines below he quotes those passages from Homer in which the term "Argos" is used to include Sparta and Corinth and islands. No doubt he finds it difficult<sup>3</sup> to understand how the city of Argos could be called parched and waterless, with its river flowing by it, and considers the tale a figment of the poets; for he cannot see how the tradition of the sinking of wells associated with Danaus, which turned, in the words of Euripides, the waterless (*ἀνυδρον*) Argos into a plain rich in water (*εὐνυδρον*), applied to the district on the other side of the Inachus, made fertile at this very day by a like system of wells.

For Strabo the history of the district begins with the Danaans, whom he associates exclusively with the city of Argos and Mycenae. "When the descendants of Danaus," he says,<sup>4</sup> "received the inheritance of his sway in Argos, and there mixed with them the Amythaonidae, originating in Pisatis and Triphylia, one would not wonder that, kinsmen as they were, they divided the district into two kingdoms: at first, in such a way that the two sovereign cities in those kingdoms were to be seen situated close to one another at a distance of less than fifty stadia, — namely, the cities of Argos and Mycenae, — and that the Heraeum, standing towards Mycenae, was the sanctuary common to both of them." It will be seen that he has entirely omitted any mention of Tiryns. He then summarizes the history of the district in the following terms: "Originally, then, Argos was the more predominant, after that Mycenae, which received considerable impulse through the immigration of the Pelopidae to it. For after all had joined the sons of Atreus, Agamemnon, as being the older, received the sovereignty, and, by the aid of good fortune and ability combined, added a large district of the country to the possessions which he had before received. And, in particular, he added the Argolic district to the Mycenaean. Thus Menelaus had the Laconian district; while Mycenae and the country as far as Corinth and Sicyon, and the land which at that time was called the land of the Ionians and Aegaeans, fell to the share of Agamemnon. We are told that, after the Trojan war, Agamemnon's rule came to an end, and Mycenae was humbled; and this was especially so after the return of the Heraclidae. For the Heraclidae occupied Peloponnesus, and expelled the former rulers; so that those who held Argos also held Mycenae, now united with Argos. But in after years Mycenae was destroyed by the Argives, so that now not a trace of the city of the Mycenaeans is to be found [?]. Seeing that such has been the fate of Mycenae, one ought not to wonder if some of the places catalogued under Argos are no longer in existence." And thus Strabo leads over to his short account of the "deserted" Tiryns and Midea.

It has been necessary to quote this passage in full, because it makes clear that the researches of Strabo do not lead him further back than the Danaans, since he is restricted to the Homeric poems as his supreme guide. We may also point to the change of locution, the moment his Homeric information ceases with the downfall of the house of Atreus as bearing upon this question. For, without warning, he passes from the direct statement to quotation in using the infinitive (*ταπεινωθῆναι*), which he has not used before, and which he does not apply afterwards when he comes to the inroad of the Dorians.

#### NOTE B (See page 12).

Our primary interest in the ancient remains of this important site and their history need not debar us from dwelling for a moment upon the supreme beauty of the natural scenery. Indeed, the primary claim to archaeological and historical interest which the country of Greece naturally

<sup>1</sup> Cf. end of VIII. 6. 5, 369.

<sup>2</sup> VIII. 6. 9, 371.

<sup>3</sup> VIII. 6. 4 and 5, 370.

<sup>4</sup> VIII. 6. 10, 372.



puts forward has often stood in the way of the due appreciation of the transcendent beauty of its natural scenery, so that this feature often takes the visitor by surprise.

Of all the many beautiful views in Greece, that from the Heraeum is certainly one of the most beautiful. If in this brilliant atmosphere, clear and lucid, yet never lapsing into flaring vulgarity, without ever having the coarseness of the too-manifest, we stand on the temple platform and gaze over the Argive plain, we see on the left, to the southwest, the peaks of Parnon and Parthenion rise in a pale blue limpid light, which seems but a continuation of the blue strip of sea in the Nauplian Gulf, and which causes the azure sky behind, cut into graceful fretwork by the delicate outlines of the mountains, to appear a paler blue. This delicate line of mountain range, chiseled in its finely cut yet never hard features, like beautiful profiles on Greek gems, continuous in its course, harmoniously varied, flows in one long-drawn sweep from our left to our right. And in this evenly flowing outline we can distinguish Artemisium opposite, shelving down by steps, Lycone and Larisa, to where Argos lies, its white monastery of the Panagia crouching and nestling to the rock, a bright white speck above the town. The line of mountains is carried on to the more distant and higher ranges grouping round Cyllene, until, at our right, it is lost in the hills that encircle Nemea. And you know that, jealously guarding the plain where the passes lead to these northernmost mountains, Mycenae crouches among its rocky glens, like a mediaeval keep, wilder, more dismal, as if it stood on guard against a northern land and people. But on our left again, to the south, where Tiryns lies, when the sun turns after noon, the rock fortress of Palamidi juts forth into the blue sea; the sun's rays beat upon its walls, and the windows from the houses of Nauplia gleam and twinkle in the distance, like earth-born daylight stars. And before us, all the time, in peaceful languor, stretches the generous plain of broad-breasted mother Gaia, with all shades of green vegetation in its wheat, barley, and oats, and clumps of olive-trees. Between this green are the bared, dark, red-brown patches of earth where the rude metal-tipped wooden plough, drawn by oxen goaded on by the long-pointed rod, has cut its furrows. These await the tobacco plant, which in its delicate infancy has been sheltered from the rough winds by wicker hurdles, and is growing happily, as from the distance it paints the bright, golden strips between the brown and green. As the sun shines on the snow of the peaks, they gleam like broadened lance-heads of polished silver; and farther down their sides, in the gullies and beneath the rocky ledges, the strong ribs and sinewy flanks of these lofty giants, where the snow has remained, the silver gleam flows out into winding threads.

And all this rich variety of line, form, and color is changed and multiplied in its aspect, though harmonized in its unity of tone, by the succession of the seasons, of the day's lights, and of the capricious effects of atmosphere. But even in the still moonlight nights, when the bells of the sheep, grazing on the slopes of Euboea, sounded in our tents as if they were but a few feet from the canvas and awakened us, and the owl screeched its shrill and monotonous call, the sight at our feet — the plain, the mountains, the sea, and sky — exercised a spell of beauty unrivaled in any part of the globe.

To the effect of this natural beauty come the historical associations of the spot to intensify the artistic charm; for where can such condensed historical associations, big with man's history, and rising out of the very earth before you and from the remains recovered from her womb, crowd in upon the imagination? They stamp their most characteristic features on your mind in the form of a general artistic mood (which often years of learned reading and thought fail to produce in the scholar), which represents the quintessence and living soul of each past period. And this mood is evoked, not by vague and uncertain and nebulous suggestion, but by the very handiwork of the men who in the distant past produced these remains now restored to the present, — nay, made part of the present and its spiritual life by the pick and spade of the excavator; for the clay moulded, the stones cut, the metal wrought, is now as it was then, and contains the life and the soul infused into them from the worker's hands, now as they did thousands of years ago, —

. . . "pure crude fact  
Secreted from man's life when hearts beat hard  
And brains, high-blooded, ticked [long] centuries ago."



Standing above the Upper Temple platform, the beholder has before him, immediately at his feet, the remains of the Older Temple, covering, without hiding, vestiges of man's history which preceded by centuries the age of Homer's heroes. Here the descendants of Phoroneus marked the beginnings of man's civilized life in Greece; here the Cyclopean masons built their wall in the times of Proetus of Tiryns. At our very feet stood the temple where the Achaeans worshiped, and where (Dietys tells us) they chose Agamemnon as their leader when they set out for Troy. Hither the sturdy Dorians came, — Temenos and all his clan. Here Phidon set up the symbols which marked an era of wider commerce. At the gates of this temple Cleomenes III. of Sparta in vain sought admittance into the shrine.

And in the glorious age when the Hellenic genius manifests itself in all its lasting splendor, when Athens leads the world, after the Persian host from the east has been driven back, when the figure of Pericles stands forth in shining light and Phidias hallows the Parthenon with the lasting beauty of his sculpture, — then Polycleitus fashions a statue, "the most beautiful of all," for that temple the foundations of which so clearly lie at our feet below the older shrine. One of the buildings at our left was probably erected in the time when Alexander the Great undertook the conquest of the world. On our right the elaborate walls on the lowest level of the precinct were erected by imperial Rome, perhaps when Hadrian presented his golden peacock to the temple. And then we see the early Christians, the Byzantines, and the Frankish and Norman knights take possession of the country, destroy this sanctuary, build out of its ruins the churches you see scattered over the plain, and erect their fortresses at Palamidi and Argos. Then the devastating Turk lays his yoke on the people of the plains. We see the traces of his handiwork in the plain, — Pasha, the village straight before us is called, — and of the army of the great Venetian republic, all transporting building material from this shrine to their mosques or their castellated citadels over yonder. The Venetian rule is succeeded again by that of the Turk; until, in the narrow pass, Dervenaki, up there to the north, in that glorious struggle of the new Greeks for freedom, Kolokotroni annihilates the Turkish host. Argos yonder was once the capital of this young republic. All these stages in man's history, like great earth-ghosts, rise from the land at our feet as we gaze over the plain. Suddenly there is a distant, faint, yet shrill whistle, and we are awakened out of this over-full, dreamlike succession and condensation of historical moods; and here we see, far over the plain, on our right, threading its way along like a centipede, a weird, elongated, moving thing, puffing smoke from its head and rapidly gliding on to Argos.

It is then that we are recalled to the life immediately before us, at our feet; the hundreds of workmen with marked Southern features, in varied and picturesque costumes; the small native horses drawing numerous carts with their rumbling noise, through which the shouts of the drivers pierce, — and all these men speaking the language of ancient Greece, changed and attenuated and abused, but still the tongue of ancient Hellas. Dotted among them are foreign-looking young men, different in feature and garb and tongue, watching over the work. And we ask, Who are these new men, these new Dorians, who speak the foreign tongue? and whence come they, and wherefore? And the answer is, They come from afar, from the land of the setting sun, thousands of miles over the salt sea. But they come not to destroy and conquer, but to restore to the light of day the life that has been buried under that soil for countless ages. And we are overcome by the sense of the great poetic justice, the rightness of things, — that the youngest inheritors of Hellenic culture among the nations should restore to the light of day the oldest sanctuary of ancient Hellas.

THE GEOLOGY OF THE HERAEUM REGION





# THE GEOLOGY OF THE HERAEUM REGION

BY HENRY STEPHENS WASHINGTON

THE geology of Argolis, as compared with that of other parts of Greece, is simple. Argolis is not only, from a geological standpoint, quite recent in formation, but it has also been the scene of much less disturbance than other parts of Greece. None of the rocks exposed date back beyond the Jurassic Period, and there is little of the profound metamorphism which has produced the marbles and schists of Attica, which according to Lepsius<sup>1</sup> are either Palaeozoic or Archæan.

In the present paper it is purposed to sketch briefly the geology of the district immediately surrounding the Argive Heraeum, say within a radius of fifteen kilometres, to examine the agencies which tend to bury ancient remains, and to discuss the site of the Heraeum in the light of the information so gained.

## GEOLOGY OF ARGOLIS.<sup>2</sup>

**Alluvium.** — The geographical and sociological centre of Argolis is the Argive plain, a flat expanse of loose alluvium, roughly triangular in shape, the apex to the north, with an area of approximately 170 square kilometres, and an average elevation above sea level of perhaps twenty-five metres. Near the coast are swamps which apparently are slowly drying up, and which will eventually disappear as marshes or will move seaward. Beyond these, to the north, is a flat, nearly horizontal plain, formed of brown, partly loose and sandy, and partly clayey loam, without stones. Nearer the mountain borders, especially to the east and north, the altitude is higher and the slope greater, and the ground contains many pebbles brought down from the mountains. This pebbly, higher zone extends north of a line curving round from Merbaka to Kutzopodi.

This plain is the latest formation of the Argive district, having been formed in geologically very recent times by the deposition, in a previously existing bay, of sediment brought down from the surrounding mountains. It is difficult, if not impossible, to give even an approximate estimate in years of the age of this plain. Measurements of the rate of deposition along the coast would furnish a basis for calculation, but at present such data are wanting. They would also yield uncertain results, since it is highly probable that the rate of deposition at present is different from, and probably greater than, that of former times. The matter is still further complicated by the fact that the coast along the Gulf of Nauplia probably has been, and is now, sinking. This fact is discussed by Cold,<sup>3</sup> who cites several instances of ancient Greek ruins now lying beneath the sea. He mentions, among others, the site of Lerna, and also refers to a road which led from this place to Nauplia along the shore, which was restored by the Venetians,

<sup>1</sup> Lepsius, *Geologie von Attica* (Berlin, 1893), p. 170.

<sup>3</sup> C. Cold, *Küstenveränderungen im Archipel* (Munich, 1886), p. 14.

<sup>2</sup> For the greater part of my information about this region I am indebted to the excellent work of Dr. A. Philippson, *Der Peloponnes* (Berlin, 1892).



but which now at several places is no longer above sea level, so that without doubt a sinking must have taken place since that time. Whether this sinking is going on at the present day is not known, nor, if so, whether the deposition of sediment is taking place along the shore at a greater rate, with consequent seaward growth of shore line. The latter is probably the case.

At any rate, it is certain that in its general features the Argive plain has changed little in historical times; and although to-day considered one of the most fertile districts of Peloponnesus, the characterization of *πολυδάμουν* given it by Homer (Il. iv. 171) still applies to it. It is probable that, like the rest of Greece, it was once far better wooded and watered than at present, and that it is consequently dryer, sandier, and less well cultivated than of yore, the deforesting of the surrounding mountains not only tending to dry up the streams, but also allowing more rapid and extensive denudation, and a consequent increased deposition of detritus on the plain below.

The Argive plain is drained by several streams, of which only the Erasinós, on the southwest, contains water throughout the year. The others, Dervenaki, Panitza (Inachus), Xerias, and several more of less importance, have for the greater part of the year dry beds, covered with rounded limestone pebbles, not even a brook trickling through them. On occasions, as at the melting of the winter snows or during heavy rainfalls, they become for a few days or hours raging torrents, which, as certain visitors and members of our party have good cause to remember, are awkward to cross. At these times they overflow their low banks, and cover considerable areas of the surrounding land with mud, sand, and pebbles.

**Neogene.** — Bounding the Argive plain on the north is an area of conglomerate belonging to the Late Tertiary (Neogene) Period. This is a southerly extension of the Tertiary belt which stretches along the north coast of Peloponnesus as far as Pylos. The Tertiary is the period preceding the present or Quaternary, and the fossils found in the Late Tertiary indicate (for Europe, at least) a climate and set of conditions less tropical than during the Early Tertiary, and more nearly like those prevailing at present. The road from Corinth to Argos, as far as Phichtia, runs through deposits of this age, and in it are excavated the beehive tombs of Mycenae. The rock south of Nemea is chiefly a coarse conglomerate formed of limestone pebbles imbedded in a fine calcareous cement. The same rock is found at the foothills traversed by the path which leads from the Heraeum to Mycenae.

**Eocene.** — The lower flanks of the Arcadian Mountains, bounding the Argive plain on the west, are composed of a very fine-grained, light-colored limestone, which splits readily into slabs. This limestone (the *Olonos-Kalk* of Philippson)<sup>1</sup> underlies Neogene conglomerate to the north, and belongs to the Early Tertiary Period, when the climate of Greece was far more tropical than now. The hill crowned by the ancient citadel of Argos (Larisa) is composed of this limestone.

**Cretaceous.** — To the east of the Argive plain we meet with the oldest rocks of this region, — limestones, shales, and sandstones of Lower Eocene, Cretaceous, and possibly Jurassic age. The slopes from east of Merbaka southward to about Nauplia are composed of shales and sandstones (Philippson's *Lygourio-Schiefer*),<sup>2</sup> which dip to the south.

Northward as far as Hagios Vasilios, on the railroad, and eastward to the Gulf of Aegina, the mountain masses of Hagia Trias, Tzernikelo, Trapezona, and Arachnaeon are

<sup>1</sup> *Op. cit.* pp. 400 ff.

<sup>2</sup> *Op. cit.* pp. 53, 390.



composed of a gray, compact, fine-grained limestone. This limestone, which underlies, and hence is older than, the Lygourio shales, is referred by Philippson<sup>1</sup> rather doubtfully to the Jurassic Period, and the Lygourio shales to the Lower Cretaceous. Lepsius<sup>2</sup> thinks that it is Cretaceous. Owing to the paucity of good fossil remains, the question is difficult to decide definitely, but I am inclined to agree with Lepsius as to its age, especially on the ground of its petrographic resemblance to the Cretaceous limestones of Attica and the similar occurrence of gabbros and serpentine, which are found in several places breaking up through the limestone.

**Geological History of the Region.** — During Cretaceous and Eocene times the region which now forms the Argolic Peninsula was beneath the level of the sea, and the beds of limestone were being accumulated largely through the growth of marine organisms on the shallow and slowly sinking sea-bottom. The accumulation was aided by the deposition of sediment brought from then existing land areas near by, which have in part disappeared through denudation and subsidence, and in part are left on the mainland of Greece and in the Cyclades.

In Post-Neogene time there was an elevation of this area, and the immense mass of rock which had been forming and hardening for ages beneath the sea was raised slowly many thousand feet into the air. This elevation, though gradual, was the means of still further consolidating the rock-mass through pressure and partial metamorphism, and was accompanied by much cracking of the crust.

Indeed, the Aegean Sea and the surrounding countries have been the scene of so much disturbance that the whole region is, as Cold puts it, crossed by a "network of cracks." One of the most important of these is that which, beginning at Cos, curves round through Santorini, Melos, and Aegina to the Isthmus of Corinth, and thence along the Gulf of Corinth. It is on part of this line that the Greek volcanoes have been formed. In fact, it is to these cracks that the main configuration of these Aegean countries is due, with their lines of islands and peculiar coastal features.

Only two of these fracture-lines, however, concern us. One is the volcanic line already mentioned, which cuts off Argolis abruptly on the east, and on which we find the volcano of Methana, the small eruptive mass of Poros, and the small outflows of dacite near Kalamaki. The other is that which runs in a southeasterly direction from about Phlius, through the Argive plain and out into the Gulf of Nauplia. This latter separated the massif of Argolis from that of Arcadia.

As soon as the Argolic massif had been raised above sea level, it became subject to the destructive effects of the atmosphere, rain and wind, heat and frost, which agencies are constantly tending to reduce all elevations of the earth's surface to a so-called base level, which would be eventually (if other forces did not come into play) that of the sea. The rain fell on the upraised surface of the old sea-bottom, and dissolved it and washed it off. The heat of the sun and the frost of winter split up the rocks, and vegetation springing up aided the disintegration. The surface material was washed seaward, the rainfall gradually forming regular channels for itself, as one can see in miniature on a sandy road after a heavy rain.

The main lines of drainage would be determined by the two fracture-lines, which would offer channels for the drainage, and which would be the parts toward which the surface water would flow. Toward these, then, the small streams made their way, gradually widening and deepening their own channels and cutting back farther and farther

<sup>1</sup> *Op. cit.* p. 390.

<sup>2</sup> *Op. cit.* p. 81.



into the limestone massif. This was consequently cut by valleys sloping toward the fault lines, and the ridges between them were subject to the same changes through the action of smaller streams tributary to the first. An examination of Philippson's topographical map of the region will reveal traces of the course of events, though subsequent erosion is the cause of some obscurity.

In this way the main topography of the mountains has been carved out by running water, and they themselves were subject to the same unceasing forces till their sides were furrowed and their spurs in many cases were cut off from the parent mountain. It was on such a spur, isolated by erosion from the mountain mass of Hagia Trias, that the Temple of Hera was built.

The site is near the top of a small eminence, roughly triangular in shape. The apex is toward the mountain to the north, from which it is separated by a deep valley; this, coming down from above, forks at the Heraeum hill. The ravines on either side, the ancient Eleutherion and Asterion, are gullies in the limestone, generally dry, but occasionally flowing with rain-water. Toward these and at the apex, the sides of the hill are precipitous, with talus and earth-slopes below. The surface of the hill slopes somewhat steeply down from the apex toward the plain, the slope being broken by two terraces, on which the two temples lay. At the top the gray cretaceous limestone of the mountains crops out in abundance, but below it is hidden by deposits of earth, part of which lie beneath the temples and other buildings, and part of which serve to cover and preserve the remains.

It is to the consideration of the accumulation of this protective mantle that the following pages will be devoted.

#### BURIAL OF ANCIENT REMAINS.

The questions of the methods by which soil and other materials accumulate over ruined buildings, and the sources whence the material is derived, are often of great interest. Little, or nothing, so far as I am aware, has been written specially on this subject, so that it may be not without interest to the archaeologist to discuss the matter in general, pointing out the various agencies that may contribute to the result. I feel that this may be especially useful, since I was often asked during the excavations how so much soil could collect on the surface of the isolated hill on which the temples stood.

The various agencies by which, in the course of time, ancient remains are covered up may be grouped under two main heads, *inorganic* and *organic*. Each of these may be further subdivided, but it must be understood that in the great majority of cases the process is complex, and that more than one of the various agencies have been active. It is also to be remembered that the conditions of the site, topographical, geological, and meteorological, as well as the surrounding fauna and flora, and its relations to war and later occupation, are the complex factors which determine the processes involved at any site.

**Inorganic Agencies.** — The two principal inorganic agencies which tend to bury objects lying on the surface of the ground are wind and water, and of these let us consider first the wind, this being that which has been chiefly involved at the Heraeum.

**Wind.** — The action of the wind in raising and transporting dust and sand is a matter of common observation on any dry, windy day, but it is only on further consideration that its importance from this point of view is recognized. Although the air is 813



times lighter than water, and its carrying power consequently far less, yet, owing to its greater velocity of motion, its power of transporting material of certain kinds is fully as great. On an average the largest sand grain which can be sustained by ordinary winds is only 0.1 mm. in diameter,<sup>1</sup> so that the material transported by wind is naturally only the finest in grain. It must also naturally be dry. Furthermore, since the raising of dust into the upper layers of the air, where velocities are greater, is greatly facilitated by gusts, swirls, and eddies, its transportation will be facilitated by conditions tending to produce these. Hence, as Udden says, "the conditions favoring wind erosion are a dry climate and a topography of abrupt and broken reliefs."

It will be seen that the climatal and topographical conditions of Greece and especially of the Heraeum site are highly favorable to wind transportation. There is the dry, dusty plain surrounded by mountains, the former supplying the material and the latter aiding by rendering the normal winds gusty and irregular. It was by no means uncommon to see from the excavations the clouds of sand and dust drifting across the plain below, and the amount of dust raised by the winds from the excavations themselves was at times a serious annoyance.

As to the deposition of the dust so raised, it is evident that, since its transportation depends largely on the velocity of the winds, anything tending to check the motion will tend to deposit its earthy burden. Objects projecting above the surface will do this, so that any ruins will become a nucleus for aeolian deposits (as they are called) on a small scale. The growth of grass and bushes will also have the same effect, and the growth about ruins is facilitated by the presence of the fine aeolian deposits, which, through the selective action of the wind and other causes, are richer in plant food than the soil they are derived from, and where also such material is in a more easily assimilable condition. The application of these remarks to the Heraeum will be deferred to a later page, but attention may be called to the calculation of Lanciani<sup>2</sup> that dust (largely wind blown) accumulates on the floor of the Forum of Trajan at the rate of an inch a year, or over eight feet in a century.

In this connection may be mentioned, for the sake of completeness, the burial of buildings and towns in Holland and elsewhere by sand dunes. In this case, however, the motion of the dunes is a rolling one, the wind blowing the back and top layers of sand continuously forward, so that the dune moves bodily forward as a whole through the motion of its component particles.

**Water.**—The action of water in burying ancient remains is of the highest importance, and takes place in several ways.

Rain falling on sloping surfaces of earth tends to wash the loose surface matter downward, and hence to bury objects which lie at the bottom of the slope. Rivers and brooks carry enormous amounts of sediment down from higher to lower levels, where part of the material is deposited, the rest passing out to sea or being deposited on the bottoms of lakes. Low-lying sites in river valleys and on plains at the foot of mountains are especially apt to be buried by such means.

This action of rivers is greatly aided by the occurrence of freshets, where the stream, much increased in volume and velocity, and hence carrying far greater loads of sediment than usual, spreads far from its banks and deposits material over areas which the normal flow never reaches. A well-known instance of this is the site of Olympia, which was covered largely by material brought down by the Cladeus and deposited in

<sup>1</sup> J. A. Udden, *Journal of Geology*, II. (1894), p. 322.

<sup>2</sup> Lanciani, *Ruins of Ancient Rome* (1897), p. 99.



times of flood. A similar action, aided by the detritus washed downward by the rain, is seen at Sardis, which is buried to a great depth by the deposit of sediment from the overhanging heights of Sart Kalessi, the ancient Acropolis. This height is composed of loose, crumbling, sandy marls, which are easily washed away, not only by brooks but by falling rain. To such an extent has this erosion taken place that the mountain crest is a mass of fantastic pinnacles and turrets, and of the ancient Acropolis but a very small part remains. The rest is gone to bury the city at its base, thus preserving the dead remains of what it protected in life.

In the case of sites near the seashore and at the mouths of large rivers, under certain conditions the sea is a prominent factor, causing a deposition of sediment where the river current is checked on entering the sea, gradually closing up harbors, forming deltas, and adding to the land. Ephesus and Miletus are prominent examples of this class.

Another agency in which water plays an important part are landslides. Here the water acts by loosening strata or by lessening the friction between two layers of earth or rock, so that large sections of a mountain-side may slip suddenly down, overwhelming all that lies in their path. Instances of this will be recalled by any one who has visited Switzerland, and landslides from Mount Cronium aided materially in burying Olympia.

Finally we must note the deposition of carbonate of lime or travertine, etc., from solution in water. This action is extremely local and of little importance in classical archaeology, though in the case of cave deposits it has been the means of preserving for us most important remains of prehistoric man.

**Volcanoes.** — As a final inorganic agency may be mentioned the action of volcanoes which bury sites at their bases, not only by lava streams, but by flows of mud and by the ejection of immense quantities of ashes and scoriae. Pompeii and Herculaneum will occur to every one in this connection, and the prehistoric remains of Santorini may also be cited.

**Organic Agencies.** — Of the organic agencies, man is by far the most important, at least in the region of classical archaeology. The superposition of one building on the remains of an older, the growth of a new settlement on the site of an older one, the general use of mud brick for private houses in antiquity, the immense accumulation of stone, brick, earth, mud, and rubbish of all kinds wherever man abides, are exemplified at Troy, Nineveh, Athens, Rome, in fact, wherever the excavator's pick has penetrated.

This mode of burial is in many respects the best known to archaeologists, partly through its obvious features, and partly through the importance of the superincumbent artificial masses. It is needless to enlarge on this factor, but reference may be made to the striking remarks by Lanciani<sup>1</sup> on the burial of Rome.

Of other animals than man only one, the humble earthworm, constitutes a factor of any importance. This animal brings up earth from its burrows and deposits it at the surface in the form of the familiar worm-casts. In one of his shorter but very interesting books Darwin<sup>2</sup> devotes much space to the development of the theory that worms are to a large extent responsible for the burial of small objects lying on the surface of the ground, and even of ruins. He gives several instances of the pavements of recently excavated Roman villas in England being gradually buried beneath such deposits and slowly sinking. Though Darwin is perhaps inclined to attribute to the worms more

<sup>1</sup> *Op. cit.* pp. 98 ff.

<sup>2</sup> *Vegetable Mould and Earthworms.*



than their fair share in these cases, yet the effect is undoubted. While the rate of deposition of worm-casts, and consequent subsidence and burial, is very slow, yet these animals form a factor not to be entirely overlooked in considering the subject.

In addition to the animal organisms, plants must not be forgotten, since they aid very materially, not only by acting as wind-breaks and consequent dust-gatherers, but also through the accumulation of matter by their death and decay. They also promote the preservation of buried remains by binding the soil together, so that wind and rain have less opportunity for action in removing it.

#### THE HERAEUM SITE AND ITS BURIAL

In taking up the site of the Heraeum more in detail, it must be recalled that the temples are situated on a spur of Mount Hagia Trias, which is cut off from the main mass by a deep erosion valley. As has already been said, this hill is largely composed of gray limestone, which lies close to the surface at the upper part, north of the old temple. As the rocky surface sloped too steeply, the massive Cyclopean retaining wall was built for the support of the Old Temple platform, which was probably largely artificial. Below this no limestone was met with in the course of the excavations, and it is rather uncertain to what extent the slope is natural. From the fact that layers of gravel were met with at low levels in several places, we can infer that much of it was part of the old mountain slope, while in other places there has been extensive filling in before the construction of buildings. Covering all the remains of buildings was a layer of soil and earth, which varied in depth from about half a metre over the Old Temple to four or five along the south and west slopes, especially against retaining and back walls.

This soil is of course subsequent to the destruction of the buildings, and it will be not without interest to see whence it was derived.

The existence of the deep erosion valley back of the hill precludes the possibility of any wash of earth from the mountain slopes above. It was also evident from the results of the excavations that there had been no settlement, at least of any size, on the hill since the abandonment of the site as a place of worship of Hera. In this respect it differs radically from such sites as those of Troy and Plataea. This is due partly to the fact that the site, at least since the earliest primitive times, was never a place of residence, but only of worship and pilgrimage, and partly, also, because the hill was of little or no strategic importance, as was that of Plataea. In some respects, from the excavator's standpoint, this is a misfortune, since not only would the accumulations of a settlement have aided in preserving the ruins, but also the use of the site as a quarry would have been localized, and the blocks and other objects would not now be scattered far over the Argive plain.

The main agency involved, then, must be attributed to the wind, as has been already mentioned, the material being derived from the mountain above, and still more from the plains below. These aeolian deposits were never of great thickness, except against steep slopes and in hollows. This is to be expected, in view of the small area of the hill and the lack of abundant vegetation. Trees are entirely absent, and, except for a few thyme bushes, the only vegetation is short, coarse grass and plants of no greater height.

Worms may have played some part in the process, but in all probability only to a small extent. As far as I can recall, worm-casts were very rare on such surfaces as that of the



cleaned-up platform of the Old Temple, and the accumulation of soil which necessitated an occasional sweeping for visitors was practically all wind-borne dust from the plain or from the excavations.

In this connection there may be described a somewhat striking instance of what may be called archaeological geology, especially since it throws some light on the methods of the old builders.

The back of the South Stoa, which is several metres below the level of the Second Temple, is a wall of blocks of *poros* stone,<sup>1</sup> which measures about 30 cm. in height. As this building was uncovered in 1894, a steep bank, some 4 metres deep, was left for a time behind it. In this section, at the west end, immediately behind the space where formerly were the upper courses of the back wall of the stoa, there were seen five narrow (2 to 3 cm.) parallel and horizontal stripes of white earth, standing out clearly against the brown earth background. The accompanying figure, drawn from a sketch and measurements made at the time, shows the state of affairs.

Examination of the thin white strips showed that they were composed of the dust of *poros* stone, mingled with some chips of the same. The earth between them varied

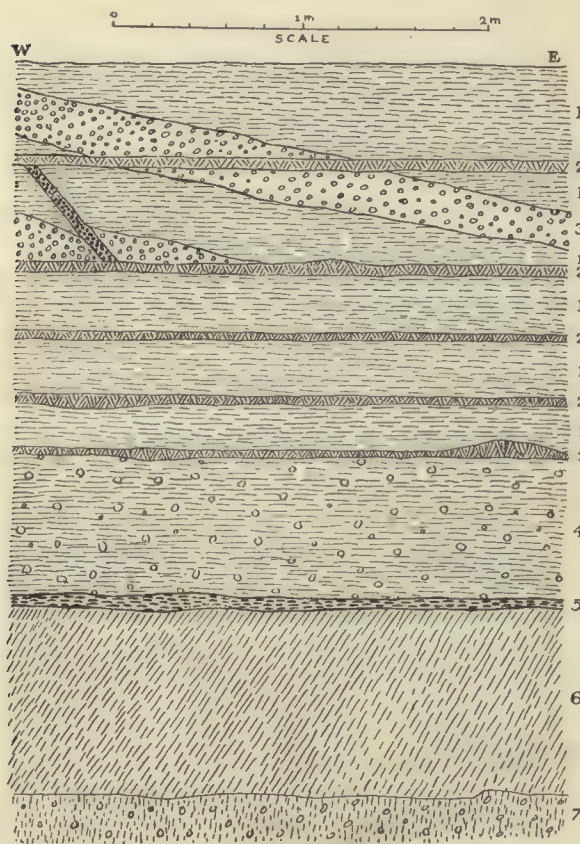


FIG. 45a. — SECTION BACK OF SOUTH STOA, 1894.

Explanation: 1, Soil. 2, *Poros* dust. 3, Gravel. 4, Soil with some gravel. 5, Yellow earth. 6, Black earth. 7, Red clay and gravel, with grave.

somewhat in character. At the bottom was red clay and loose gravel, in which were found some objects of bronze and a small grave, lined with rough stones, containing a skeleton and the Mycenaean vases described elsewhere. Above this is about 1 metre of blackish earth, overlaid by 4 cm. of yellow earth. Then follows 75 cm. of earth with some gravel, and above this, in alternate order, three 2 cm. layers of *poros* dust and three (25 to 30 cm.) of solid brown earth, the last of these being overlaid by 3 cm. of *poros* dust. Above this the relations are somewhat complicated by the presence of oblique strata of gravel, but we have here also 50 cm. of earth, 3 cm. of *poros* dust, again 50 cm. of earth, and then the surface of the previous year's excavation, on a level with the foundations of the Second Temple.

Here is an instance of archaeological geology, which tells a story. In the first place the red clay and gravel at the base of the section, and in which the grave was found, is evidently subsoil, existing prior to settlement at the locality, while

the black earth which covers it is the old surface soil. *Poros* stone is quite foreign to the locality, and the presence of layers of this can only be attributed to the agency of

<sup>1</sup> This is a soft whitish travertine, extensively used for building in Greece. It derives its name from one of the localities in which it is found.



man, and derived from material used in construction, presumably that of the back wall of the stoa, which is constructed of this stone. It will be observed that the layers of earth are each about 25 cm. thick, or multiple of this by two or three.

The hypothesis which accounts best for these facts is as follows: When the stoa was to be built, it was necessary to cut away some of the bank behind it, about down to the old soil. In this, the first few courses were laid in a trench, as foundation blocks. Above these, three courses of blocks were laid, which would make the height about as great as a man could work comfortably. Earth was then thrown in behind, and the blocks for the next course worked into shape, the dust from this making the first thin *poros* layer. One course was laid, earth filled in, and more blocks worked, and so on, the space behind being filled in sometimes after one and sometimes after two courses. The sloping bands of gravel in the upper part are somewhat more difficult of explanation, but are probably derived from earth thrown out of some excavation near by, forming talus slopes. This was possibly that of the West Building, since the direction of up-slope is toward this.

#### NOTE ON THE IGNEOUS ROCKS FOUND IN THE EXCAVATIONS AT THE HERAEUM.

During the excavations at the Heraeum site a number of rough, as well as worked, pieces of igneous rock were met with. Since, as has been previously explained, the only rocks occurring in the immediate vicinity are limestones and shales, it is evident that these igneous rocks were brought from a distance, and it is believed that a study of them might throw some light on their possible places of origin.

The writer accordingly brought home a number of representative pieces, none of any archaeological value, *per se*, and has studied them by the ordinary petrographical methods, the results of which are here briefly given. Since but a small amount of space can be devoted to this topic, which is rather foreign to an archaeological volume, no explanation of the technical terms employed has been attempted, and, to the archaeologist, only the few conclusions which may be drawn will be of immediate interest. The specimens are grouped according to their petrographical characters.

**Gabbro.** — With the exception of one unworked piece, all the specimens of this rock are represented by so-called "hammer-stones." These are cuboidal in shape (i. e. cubes with rounded edges and angles), which vary in diameter from 3.5 to 7.5 cm., and in weight from 150 to 400 grms. The surfaces are smoothed but not polished, and in some cases rather rough and pitted from incipient weathering.

The use of "hammer-stones" was, as the name implies, for pounding, either taking the place of our modern hammer, or as a pestle for reducing grain to meal. For this purpose a hard, tough material is essential, and this quality being characteristic of the gabbros, this rock is highly suitable for the purpose.

Hammer-stones are very commonly found in prehistoric deposits in all parts of the globe, having been evolved from the primitive, naturally rounded pebble. Their relative abundance at the Heraeum, as well as at Plataea (where I also met with numbers of them) and at other Greek sites, would indicate that they were in common use among the Greeks down to a quite late date. It would be of interest to collect and study all the facts available as to their occurrence at Greek sites, since the apparent survival of such decidedly primitive implements among a people in such a high state of culture is striking. It seems possible that this may have been the result of their use in religious ceremonies, e. g. for preparing the meal for sacrifices, just as the flint knife was used in sacrificial ceremonies in many countries long after the knowledge of bronze and iron had become general.

A number of those found show signs of wear by the presence of an especially rough surface or chipped edges, while others which present a very smooth, almost polished face, indicate that they



were used as grinders or rubbers for making meal, just as similar implements are employed at the present day by the Mexican Indians and other peoples. One specimen even showed signs of both uses, having its largest face quite smoothly rubbed, but with rough depressions in the centre, as if it had also been used as a hammer against a chisel or other hard metallic instrument.

Gabbros are rather frequently met with in the eastern part of Greece, having been described as coming from Euboea, Attica, and near the Isthmus of Corinth. As I met with one or two masses of this rock cutting the limestone near Mycenae, it is probable that the material of these hammer-stones comes from the neighborhood of the Heraeum, and that they were of home manufacture.

Petrographically these gabbros offer no especially noteworthy features. They are somewhat coarse-grained, and under the microscope are seen to be rather ophitic in structure, some of them being almost true diabase. They are composed of automorphic, rather basic labradorite, pale diopside, and occasionally diallage, which are frequently uralitized, with some magnetite. A little orthoclase is sometimes seen, which may be connected with the tendency of many of the rocks of the eastern part of the Mediterranean basin to a monzonitic character. In general they correspond with some of the descriptions of Becke and Lepsius of Euboean and Attic gabbros, though no tendency toward glaucophanization of the pyroxenes was observed.

**Felsite Porphyry.** — Several rounded, waterworn pebbles and fragments of two hammer-stones composed of a dense green felsite were found. These are all more or less porphyritic, the phenocrysts being entirely of an apparently alkaline feldspar. In one or two instances there is a well-defined flow structure in the apparently originally glassy base. But all the specimens examined are thoroughly devitrified, the feldspars having lost their transparency, and the base being changed to the usual very finely granular, cryptocrystalline aggregate.

These porphyries are somewhat similar to the well-known labradorite-porphyry of Laconia (*verde antico*), though the phenocrysts are by no means as prominent or numerous, the color is much lighter, and the feldspars are apparently alkaline rather than a basic plagioclase, but in their present altered condition this point can be decided only by a chemical analysis.

It seems scarcely likely that the pebbles would have been brought from any considerable distance, and they may possibly have been brought down by torrents from dikes in the neighboring limestone, and this, possibly, is also the origin of the material of the two hammer-stones. While it would not be surprising to find dikes of such rock in the region, yet it must be remarked that I met with none such in my tramps about the district, and that none were noted by Lepsius. A fragment of a similar felsite was found by me on the north coast of Aegina, where it almost certainly was not derived from the island itself, and it seems possible that the peculiar color of these rocks may have been the cause of their transport from a distance.

**Andesites.** — The specimens representing these rocks were with few exceptions rough fragments of various sizes. Apart from these, one rather large oval slab was found, with a depression in the centre, apparently a rough mortar for grain, as well as a fragment of a rather thin flat corn-grinder, marked on one side with parallel grooves.

These andesites vary from rather coarse to fine grained in texture, one or two being quite dense and vesicular. They are all hornblende-andesites, showing well-formed phenocrysts of yellowish brown or brownish-green hornblende, a little greenish biotite, and a rather basic andesine or acid labradorite, in a dusty glassy groundmass, which is hyalopilitic with microlites of the same minerals.

With one exception they are closely similar to the hornblende-andesites of Aegina, and it seems reasonable to suppose that the blocks were brought from that island. This, at least, is the nearest locality, though closely similar rocks are met with at Melos and on the west coast of Asia Minor.

The only exception is the corn-grinder, which differs from all the andesites of Aegina, Methana, Melos, and Asia Minor that I have studied. There seems to be some reason<sup>1</sup> for thinking that this came from the small island of Nisyros (off the coast of Asia Minor north of Rhodes), which was, according to Strabo,<sup>2</sup> noted for its millstones.

**Obsidian.** — A number of flakes and "cores" of a black obsidian were found, which are exactly like those found during the excavations at Plataea. Under the microscope they show a well-marked

<sup>1</sup> Cf. H. S. Washington, *Journal of Geology*, III. (1895), p. 73.      <sup>2</sup> Strabo, X. 5-16.

flow structure, occasionally banded (eutaxitic), but without phenocrysts of any kind, the flow structure being brought out by the numerous globulites and other excessively minute bodies scattered through the mass. Apart from the colorless glass the only constituents are small microlites of magnetite, diopside, and feldspar, which last is often in pretty skeletal forms.

No such obsidians have been found in the neighboring Aegina and Methana, but closely similar volcanic glasses are met with on Melos and Santorini (Thera), and it is highly probable that one of these islands is the place of origin for these specimens.

One or two obsidian arrowheads were found at the Heraeum, and it is possible that the flakes and cores are the remains of the manufacture of these, or possibly of knives for some sacred use. The occurrence of these flakes and stone weapons is in line with that of the primitive hammerstones, all of them belonging anthropologically to a much earlier period of development than that of their place of discovery.





ARCHITECTURE OF THE ARGIVE HERAEUM







ARGIVE HERAEUM. — DETAILS OF THE SECOND TEMPLE, AND CYMA-MOULDINGS FROM THE SOUTH STOA





# ARCHITECTURE OF THE ARGIVE HERAEUM

By EDWARD LIPPINCOTT TILTON

THE Argive Heraeum was at a very early time a place of high importance in Greece, and its architectural remains silently indicate that it continued to be a religious centre for many centuries. The buildings themselves have indeed been entirely destroyed, but it is still possible to piece together the fragments into a whole which may in a measure simulate the original, to restore as a result from excavations the temples, porticoes, and other buildings of the famous sanctuary of Hera.

## TOPOGRAPHY<sup>1</sup> AND SURVEY.

The Argive plain consists chiefly of an alluvium deposited during the course of ages. It comprises an approximate area of one hundred square miles, extending from the Gulf of Argos northerly about ten miles to the entrance of the gorge of Mycenae, and



FIG. 46. — ARGIVE HERAEUM : VIEW FROM THE NORTH.

Showing in the distance the hills back of Nauplia. The rocky eminence in the foreground is northeast of the Old Temple.

as many miles east and west. This exceptionally flat expanse of country is bordered on three sides by low foothills, beyond which roll higher hills and mountains like petrified waves northward toward Corinth, eastward toward Epidauros, and westward until they blend with the mountains of Arcadia. The first ripple into which the plain breaks on

<sup>1</sup> See also Introduction, pp. 10-25.



the north rises about five hundred feet (152 metres) above the sea level, and the beauty of the site is sufficiently attested by the fact that the Greeks chose it for the sanctuary of Hera (PLATES II., III., Figs. 46, 47, 48).

Fig. 1 (p. 7) is a map of the Argive plain based upon Steffen's map of the Argolid given in his *Karten von Mykenai*, 1884. The site of the Heraeum is indicated upon it by a small rectangle which is enlarged and shown in detail in the upper right-hand

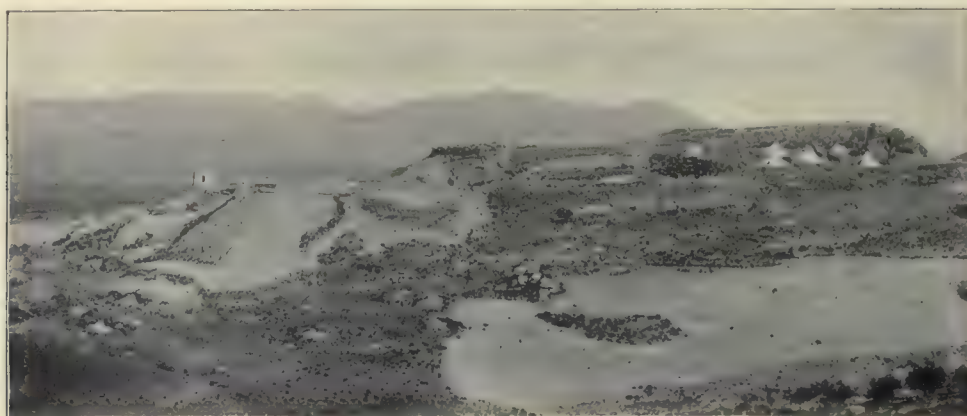


FIG. 47. — ARGIVE HERAEUM : VIEW OF THE SITE FROM THE EAST.

The rocky eminence is the same as shown in Fig. 46, below which the tents of the excavating party are pitched. In the centre of the picture is the Cyclopean wall which supports the Old Temple terrace ; next, to the left, is the Second Temple platform ; then the *phylakeion* and the slope to the South Stoa. The retaining walls of the East Building are visible near the centre of the picture and in about a line below the Cyclopean wall. The tilled ground in the foreground is shown on PLATE IV.

corner of the illustration.<sup>1</sup> Again on this enlarged plan is shown, by a small white square, the position of the entrance to the tunnels or subway aqueducts which are referred to by Dr. Waldstein in the General Introduction (pp. 14 ff.).

The Heraeum lay approximately three miles southeast by south from Mycenae,<sup>2</sup> four and one half miles northwest from Midea, six miles north-northwest from Tiryns, eight miles north-northwest from Nauplia, and four and one half miles northeast from Argos. The site is shielded on the north and northeast by the mountain peaks of Euboea and Hagios Elias (Berbatiotikos), which tower in heights that vary from one to two thousand feet above the level of the gulf. PLATE IV. is a general map of the site of the Heraeum showing the present condition of the ruins after excavation. The map is drawn on a true north and south axis, the variation of the compass needle being 6° 43' west of true north when this survey was made in April, 1895.<sup>3</sup>

<sup>1</sup> The small Roman numerals on this larger rectangle are the same as in PLATE IV., and are explained in the legend of this Plate. They are also used throughout this chapter, and elsewhere in this publication.

<sup>2</sup> Pausanias, II. 17 : "To the left of Mycenae, at a distance of fifteen furlongs (stadia) is the Heraeum" (Frazer's translation). As a stadium was about 600 feet, Pausanias's statement would make the distance 9000 feet, or less than two miles.

<sup>3</sup> To survey the site I began on the rising ground north of the Old Temple and placed the theodolite on the spot indicated on PLATE IV. by a circle and cross-lines. The direction of true north was obtained as follows : Thurs-

day, April 4, 1895, at midnight and four minutes I sighted Polaris with the star Alioth in line above it. Waiting until 12.28, I sighted the north star alone and marked the spot (No. 1) under the plummet of the instrument, and another (No. 2) under a plummet depending from a pole 1.35 m. from No. 1, and then placed a pin at a point (No. 3) in line with No. 1 and No. 2, and 5.48 m. from the former. Friday morning, April 5, I fastened a taut string along the line 1, 2, and 3, and another string from No. 1 in the direction of the compass needle. Then sighting each string in turn through the theodolite, I read the degrees of variation as 6° 43' west of true north.

From this station-point of the instrument I found the

The dry stream-bed around the north and west of the site is the Revma-tou-Kastrou, and may be the Eleutherion of Pausanias, while a natural assumption would identify the river-bed on the east as the Asterion, although the balance of evidence seems finally to uphold Steffen's view that the Asterion is the stream which flows down the far eastern flank of Mount Elias and loses itself in the Klisura glen, and is not shown upon our map.<sup>1</sup>

The architectural remains of the Heraeum are unfortunately too few to afford an exact restoration of all the buildings. The peculiar prominence and accessibility of the site



FIG. 48. — ARGIVE HERAEUM: VIEW OF THE SITE FROM THE WEST.

The men are excavating the Lower Stoa (X).

rendered it a convenient quarry for later builders, and the mediaeval churches on the plain and the fortresses on the adjacent hills have been largely constructed of stones

direction of one peak of Mount Euboea to be  $30^{\circ} 32'$  east of true north, and its elevation above the horizon  $18^{\circ} 8'$ . Another peak was  $27^{\circ} 53'$  north of east and elevated  $12^{\circ} 41'$ . Mount Arachnaeum was  $18^{\circ} 37'$  south of east and elevated  $2^{\circ} 55'$ . Directly south was the island Bourzi, near Nauplia, with its water line  $0^{\circ} 51'$  below the horizon. Directly west the mountain summit was elevated  $2^{\circ} 38'$ . From the first station-point of the theodolite I ran a line due south, and from this erected verticals east and west as base lines and obtained the angle that the ruins of each building made with the base lines. The running measurements were made with a steel metric tape, wherein I was assisted by Iohannes, a little Greek boy from Chonica.

The extent of the site occupied by the construction is about 500 m. north and south by 1000 m. east and west. The difference in levels between the highest building (the Old Temple, I) and the lowest building (Stoa X) is 29.34 m., as is shown by the table in the text (p. 108). When measuring the ruins my primary object was not to formulate any theories, but to obtain exact data, and to this end I made careful running measurements of the joints of every accessible stone in the ruins of each building and made drawings of each to the scale of one centimetre to the metre, verifying all to insure accuracy. I next measured and drew to a larger scale plans, elevations, sections,

and isometric perspectives of all the loose stones and architectural fragments found on the site, 310 in all, and made full-size drawings of all capitals to obtain their exact profiles, and of the ornamental details, e. g. lions' heads and cyma-mouldings, and gave to each of the 310 fragments a number in order to facilitate reference. Finally, I made colored drawings of the terra-cotta fragments and water-color sketches of the landscapes.

The method of procedure is described in full to show that, notwithstanding the lack of expert assistance and of fine measuring instruments, a careful endeavor was made to obtain exactly all the data yielded by the site. The results are now presented to the reader, who is thus furnished with all the materials, and can make his own restorations of the buildings should he disagree with the deductions of the author.

It may be well to note here that the shadows on all of the drawings are projected at  $45^{\circ}$ , thereby enabling one to determine the height of an object by the width of its shadow on the plan, and the projection of an object by the height of its shadow on the elevation.

I wish to express my thanks to Mr. Milton Bancroft, Mr. E. A. Josselyn, and Mr. E. B. Nolan, who have assisted me in rendering some of the drawings.

<sup>1</sup> Cf. Dr. Waldstein's Introduction, p. 15.



from this source. At Olympia the position of the Altis between the hill Cronium and the rivers Cladeus and Nepheus favored a more speedy burial beneath the rapid accumulation of sand and material which was deposited by the river's inundations and washed down from the hills by the rains, and consequently a better preservation of its ruins. The Argive Heraeum, on the contrary, occupied a foothill of Mount Euboea,<sup>1</sup> above the level of the plain, and its once sacred buildings had no doubt been robbed and demolished by desecrating hands before the action of the rains and dust-storms had concealed the foundations that now remain.

The ruins are sufficient, however, to indicate that the site was occupied throughout the ages from prehistoric to late Roman times, and to justify the attempt at a restoration shown on PLATES V. and VI. Following is a list of the ruins exhumed, with the orientation and relative level of each.

The stylobate of the Old Temple is taken as the *datum* level, and the levels of all the other buildings, being lower, are indicated by the minus sign.

	ORIENTATION.	LEVEL OF THE	METRES.
I. Old Temple	17° 18' S. of E.	Stylobate	0.00
		Terrace	- 0.45
II. Upper Stoa	15° S. of E.	Column Bases	-10.85
III. Northeast Stoa	13° S. of E.	Column Bases	- 8.75
IV. East Building	7° S. of W.	Wall	-11.10
V. Second Temple	16° 23' S. of E.	South Wall	-11.93
		Stylobate	-10.71?
VI. South Stoa	16° 30' S. of E.	Column Bases	-22.93
		Bottom Step	-25.26
VII. West Building	8° 30' E. of N.	Column Bases	-21.35
VIII. N. W. Building	26° 45' S. of E.	Old Bases	-17.90
IX. Roman Building	25° 50' S. of E.	Tile Floor	-26.41
X. Lower Stoa	23° W. of S.	Column Bases	-29.34

Besides the above the *Phylakeion* No. XI. is indicated on the plan. This is a small house built for use during the work of excavating and since occupied by the Greek guardian.

A, B, C, D, E, and F on the Plan are cisterns and baths.

#### OLD WALLS.

In addition to these generally well-defined ruins, there are numerous remains of old walls that apparently antedate the earliest of the above-named buildings, and may be classed as primitive Argive work and possibly Pre-Mycenaean.<sup>2</sup> Of these we would mention in particular the walls south and west of the Temple, which may be portions of the *peribolus* which inclosed the original *temenus* (cf. PLATE VII.). This theory is confirmed by the abutments that lie at an obtuse angle to the western wall and resemble the tower-foundations of the early constructions at Hissarlik and Tiryns. They apparently mark an ancient entrance to the sanctuary. Furthermore, two very old graves were found just outside the southern wall (indicated on PLATE IV. as two black spots between

<sup>1</sup> Pausanias, II. 17: "The sanctuary itself is on the lower slope of Euboea. For they name this mountain Euboea."

<sup>2</sup> Cf. Dr. Waldstein's Introduction, p. 27.



FIG. 49. — ARGIVE HERAEUM : VIEW LOOKING NORTH UPON THE CYCLOPEAN WALL AND NORTHEAST STOA (III).

Stoa VI and the old wall), and as burial within the temenos was doubtless prohibited, the evidence is strengthened that this old wall is a portion of that which originally inclosed the sanctuary.

Further remains of very old walls are shown on PLATE IV. lying just south of the Cyclopean wall; these may be the ruins of dwelling-houses for the priestesses or attendants. Other vestiges of old stone work are distinguishable in the interior of the Second Temple (V), indicating, at this most important point of the old temenos, the possible position of the ancient altar, which probably stood on or near this site long before the construction of this temple.

These walls consisting of unworked small-sized stones, laid up as rough irregular rubble without mortar, indicate a very primitive state of architectural art, similar to the walls found in the lowest layers of Hissarlik, and, like these, they may have had superstructures of sun-dried bricks.

#### CYCLOPEAN WALLS.

Next in chronological sequence are the massive Cyclopean walls which supported the Upper Terrace (I); these are shown on PLATE IV., and in the plan on PLATE VIII., and in elevation on PLATE IX. (cf. PLATE III. and Fig. 49). The walls resemble and are doubtless coeval with the earliest walls of Tiryns, which Dr. Waldstein supposes to have been built by Proetus about 1900 B. C.<sup>1</sup> One of these huge, irregular boulders measures 5.20 m. in length by 2.00 m. in height. Its width is concealed by the terrace. These

<sup>1</sup> Cf. Dr. Waldstein's Introduction, p. 2.



large unhewn conglomerate boulders were laid up as rubble work without mortar, fitted together roughly with little or no cutting, their interstices being filled with smaller stones, but produce a result that shows a great advance over the earlier walls and one which arouses our admiration and wonder; for even with modern appliances it would be no small feat to construct a wall of such huge blocks with counterpoise sufficient to withstand the thrust of the terrace, the shocks of earthquakes, and the disintegrating action of centuries.

#### THE OLD TEMPLE PLATFORM AND THE OLD TEMPLE.

The terrace platform was originally leveled by removing the natural rock and earth from the north side and by filling in behind the Cyclopean retaining wall (cf. PLATE X.). In order to make a firm foundation and to prevent the earth from being washed away by the rains, a stone pavement was laid in width about eight metres parallel to the retaining wall. The pavement resembles the oldest paving in a courtyard at Tiryns and consists of irregular limestone blocks dressed roughly on the top, most of them triangular in shape and averaging in length about 70 centimetres. The Old Temple (I) was built partly upon this pavement, but mostly upon the natural earth and rock of the terrace. The remains of the Old Temple, though very meagre, are still sufficient to justify the restoration shown on Fig. 50, PLATES IX., XI. All that exists *in situ*, as appears on the plan on PLATE VIII., is a portion of the stylobate, of a reddish limestone, 19.20 m. long, 1.04 m. wide, and 0.45 m. high. The diagonal jointings indicate early work. The tops of the stones have flaked off and are much disintegrated, as though by the action of heat when the temple was burned.<sup>1</sup> This disintegration, however, may be accounted for in part by the character of the red limestone, which deteriorates naturally in the course of ages and is far inferior in quality to white limestone.<sup>2</sup> Before our excavations, the platform had been covered by dirt to a depth of one metre, and a layer of harder earth similar in texture and appearance to caked lime was found in various places 0.30 m. above the pavement, while beneath this layer lay a stratum of black burnt matter and charcoal.

Fortunately distinct traces are still preserved of three circles slightly depressed in the stylobate, which indicate the position of columns. These circles are 0.80 m. in diameter and spaced from centre to centre, 3.50 m. and 3.51 m. respectively, making their intercolumniation 2.70 m. and 2.71 m. or about three and one third diameters.<sup>3</sup>

The columns and entire superstructure were doubtless of wood, as is indicated by the small diameter and wide spacing of the columns, by the lack of any architectural stone fragments,<sup>4</sup> by the remains of charcoal and other burnt matter, and by the absence of any foundation under the stylobate.

<sup>1</sup> Pausanias, II. 17: "Above this temple are the foundations of the former temple, together with the few other remains of it that escaped the flames. It was burned down through Chryseis, the priestess of Hera, having fallen asleep, when the flames of the lamp caught the wreaths. Chryseis fled to Tegea and took sanctuary in the temple of Athena Alea. In spite of this great calamity the Argives did not take down the statue of Chryseis, and it still stands in front of the burnt temple."

<sup>2</sup> Dörpfeld, *Tiryns*, cap. vi. B, Technical Remarks.

<sup>3</sup> The columns of the Heraeum at Olympia vary in diameter from 1.00 m. to 1.28 m. and the distances between centres vary from 3.09 m. to 3.63 m., making the intercolumniations average about two diameters.

<sup>4</sup> I found several very archaic stone capitals and a broken column-drum below this terrace which may have belonged to the Old Temple, although I concluded they were more probably fragments of the North Stoa (II), and the West Building (VII); see PLATE IV. The capitals are shown on Fig. 51, B, C, H, and will be referred to again in connection with the North Stoa. The column-drum (V in PLATE XXIX.) shows a slit for lifting by means of a rope. Of course, it is quite possible that stone columns were gradually substituted for the wooden ones as the latter decayed, which was done at the Olympia Heraeum, especially as the late date, 423 B. C., of the destruction of the building would lead us to

At a distance of 7.18 m. north of the stylobate is a base built of irregular stones. This base measures 1.80 m. square, as is shown on the plan.<sup>1</sup> In my restoration of the ground plan of the Old Temple (Fig. 50), I have assumed this base to be part of the foundation of the old statue of Hera, and to lie on the longitudinal axis of the building. North and south of this axis and at equal distances from it I found slight indications of what I assumed to be the foundations of the cella-walls. The superstructure may have been of sun-dried bricks, since no definite vestiges remain.

I continued the peristyle by spacing the columns three and one half metres on centres (B, C, D, Fig. 50), following the indications on the stylobate before mentioned, and found that one of the columns of the pronaos (A, Fig. 50) coincided exactly with a mason's centring mark on a stone 24.90 m. east of the base of the statue. The stone is shown on the plan (PLATE VIII.). The result of the calculation was a hexastyle temple with fourteen columns on the side and a cella 36.30 m. long and 8.50 m. wide, or with width to length about as 1 : 4½. The proportions of the naos inside are, width to length, as 1 : 4. This is about the proportion which we should expect to find in a temple of great antiquity.<sup>2</sup>

My restoration of the entablature and roof is entirely hypothetical and illustrates only the possible appearance of the temple. I have assumed that the beam ends showed with

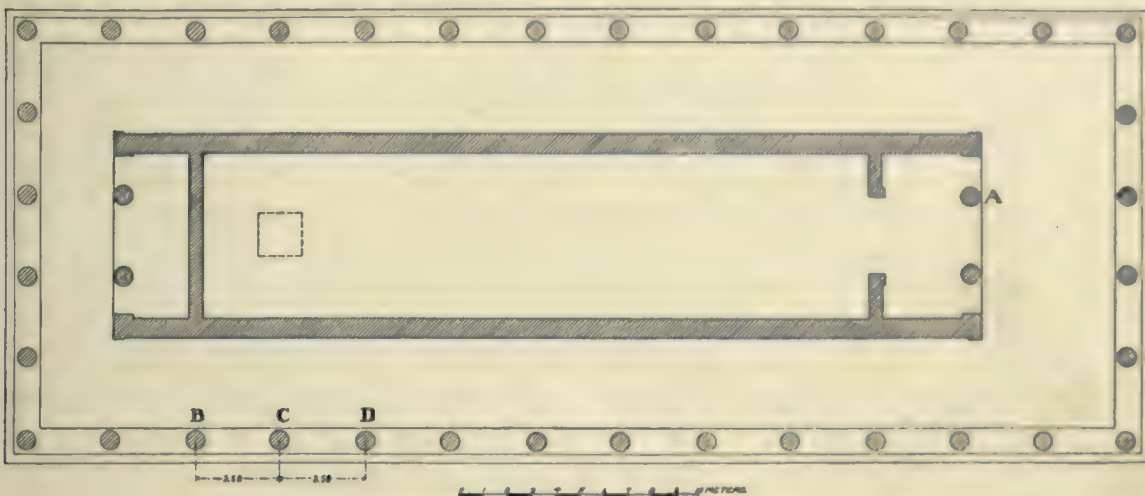


FIG. 50. — ARGIVE HERAEUM : OLD TEMPLE PLAN : RESTORED.

open spaces between them, which seems to have been the early method of Doric construction, whence were developed later the triglyphs and the metopes.<sup>3</sup>

The orientation of the building is  $17^{\circ} 18'$  south of east. The heliacal orientation of its axis may assist in determining the antiquity of the building.<sup>4</sup>

expect stone columns and walls even though the entablature of wood remained.

<sup>1</sup> This may be the foundation of an altar. Close by it is a hole surrounded by irregular stones, which may be the remains of a sacrificial pit similar to that discovered by Dr. Dörpfeld at Tiryns.

<sup>2</sup> The proportions of the Heraeum at Olympia are as follows : —

Exterior width of cella to its length as 1 to 3.30.

Interior width of naos to its length as 1 to 3.80.

The Temple C at Selinus : —

Exterior width of cella to its length about as 1 to 4.

Interior width of naos to its length about as 1 to 3.

Temple S at Selinus : —

Interior width of naos to its length about as 1 to 4.

Cf. Durm, *Die Baukunst der Griechen*, p. 114, and Perrot et Chipiez, *Histoire de l'Art dans l'Antiquité*, tome VII. chap. III.

<sup>4</sup> Following this suggestion, Dr. Waldstein obtained a letter on the subject from Dr. Penrose. Cf. Introduction, page 29.



## UPPER STOA.

Below the terrace of the Old Temple are several buildings (II, III, and IV on PLATE IV.), shown in section on PLATE XI., and in elevation on PLATE IX.; the present state of their plans is shown in detail on PLATE XII.

The walls in parts present some confusion, owing to later buildings having been superimposed on earlier constructions. For example, the west end of Stoa II seems to have been built on foundations of an earlier building. In the Northeast Stoa (III) are later partition walls, and between this and the East Building are several older foundation walls which run at various angles that bear no definite relation to the buildings named.

I have attempted a somewhat free restoration of these buildings (see PLATE IX.), since the fragments found were too few to insure accuracy throughout.

In Stoa II (PLATE XII.) the stone bases for the columns are *in situ*; they are light limestone and nearly every one has a small pry-hole, which indicates the position of a column. They are cut true on top and on the sides to a certain depth, below which the stone is left rough, having been concealed by the flooring of mosaic or tile. The stylobate stones are similarly cut on the inside and bear vestiges of pry-holes. On the outside exposed surfaces the stylobate stones and steps are well cut and neatly jointed. Where some of the stylobate stones have been removed, a foundation is revealed of irregular stones, as shown on the plan.

Two column-drums, of 0.60 m. diam. and with sixteen flutings, remain on bases in the Stoa, and I conclude that the very old capitals of Fig. 51 were from this building, together with two old cornice (*geison*) blocks, one of which bears traces of colored plaster. Owing to the smallness of the columns and their wide intercolumniation, it is very probable that the entablature of the Stoa was of wood, and the stone cornice blocks may have belonged to an inclosed portion of the building at the west end. The height of the portico columns could not have exceeded three metres (cf. Fig. 52, E). The rear wall was built of *poros* stone, and a drain behind the wall indicates that the roof pitched to the rear as well as to the front, with a ridge in the centre. This drain carried the rain-water into a small reservoir running back into the ground, as shown on the plan (PLATE XII.), and in the elevation of the present state (PLATE IX.). Adjacent to this reservoir are remains of three cisterns or baths, B, C, D, with plastered floors.

Between this Stoa II and the Northeast Stoa is a level platform cut out of the conglomerate rock with a rear wall of fairly good workmanship (cf. Fig. 49). Several bases, probably for statues, still remain on this platform, one being partially concealed by a later wall. One of these bases at the west end of the platform is shown in detail on PLATE XXIX., B and H. It consists of light limestone in three sections rebated one over the other, with joints cut to a nicety and filled with lead. Besides these bases there are many cuts in the stylobate and elsewhere for stelae. This platform may at one time have been roofed. The two walls which project forward from the rear are later than the rear wall and are not bonded into it in any way. In my restoration I have assumed that the platform was open and that steps ascended from it to the upper terrace, feeling justified in this conclusion by the presence of the statue-bases and the absence of any evidence of columns.

An interesting stone is one of a confused group shown on the plan about the centre of the front steps of the platform. On it are carved two birds, probably doves (Fig. 53). Another stone of great antiquity (Fig. 54) was found in the adjoining Building III, with

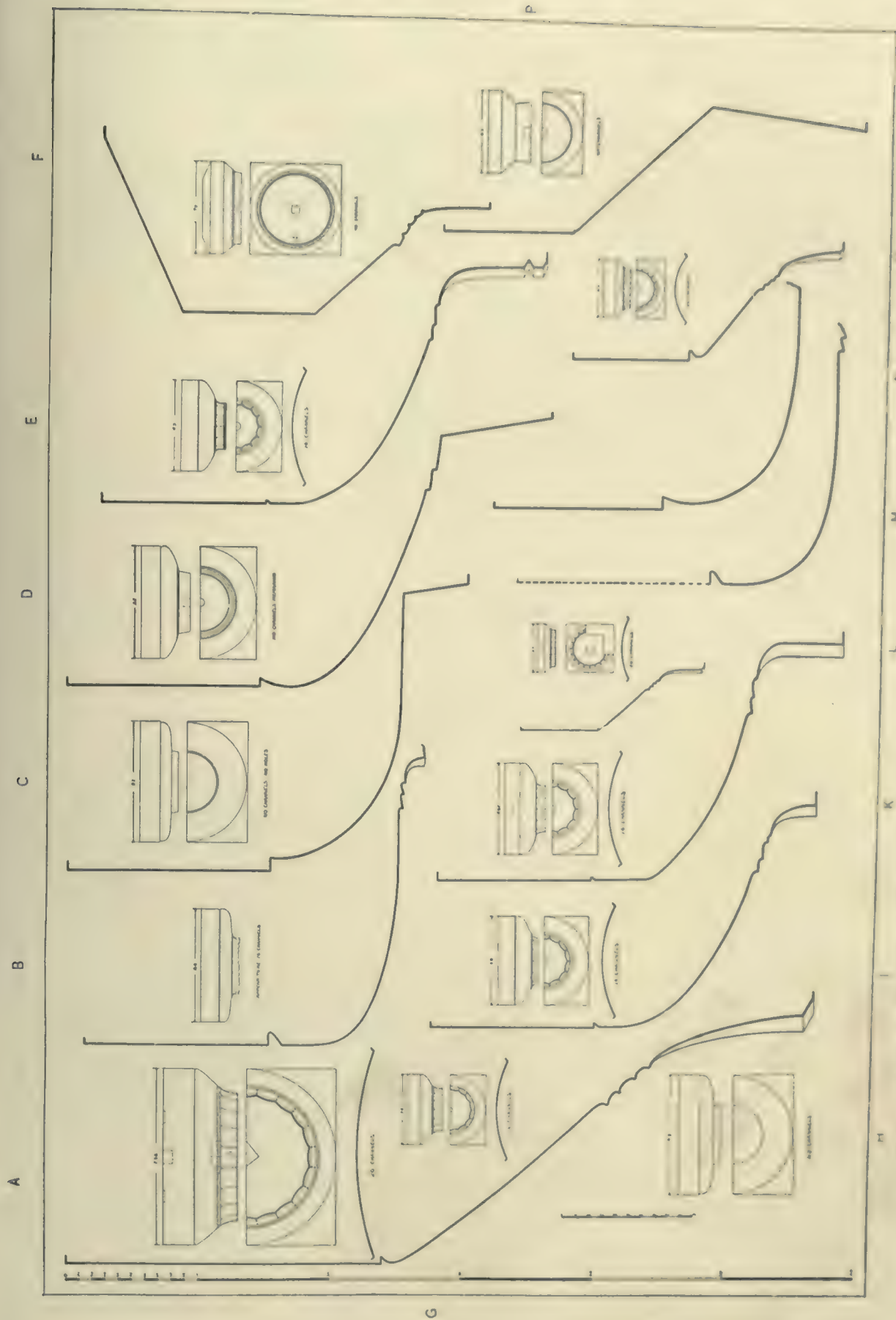


FIG. 51. — ARGIVE HERAEUM : CAPITALS, AND DETAILS OF THEIR PROFILES DRAWN TO A LARGE SCALE. BY EDWARD L. TITTON.  
 A, Second Temple ; exterior column. L and F, Second Temple ; interior columns, upper and lower orders (?). B, C, D, G, H, M, N, Stoa II and West Building VI.  
 E, I, K, West Building, upper order. P, Northwest Building (?). O, Stoa III (?).



carving of fish and waves. The hole through it was probably for the purpose of securing cattle before the sacrifice, and would lead one to consider it part of an old altar.

## STOA III.

The Northeast Building or Stoa (III) is inside its walls 20.60 m. in length and 6.00 m. in width. The conglomerate rock was partially leveled to receive its finished flooring, which appears to have consisted at one time of *poros* stone blocks, as shown in the north-west corner, where ten of them still remain *in situ*. It is evident, however, that these



FIG. 52. — COLUMNS FROM THE ARGIVE HERAEUM.

stones were not part of the original flooring, since they are above the level of the column bases. The original walls at the rear and side remain to the height of about one metre (cf. Fig. 49). They are built of light limestone carefully tooled, finely jointed, and laid up without clamps or mortar. The east wall is 0.60 m. thick and does not bond with the rear wall, indicating that the original intention may have been to extend the Stoa farther

toward the east. The exterior of this east wall is irregular, having been concealed by the bank of earth or by steps ascending to the higher level of the upper terrace. The level of this building is about two metres above that of Stoa II, and remains of steps exist along the entire length. On PLATE IX. I have indicated a suggestion for the restoration of these steps.

The foundations of the steps are of *poros* stone, the steps having doubtless been light limestone and a continuation of those which exist in front of the Stoa II and the open platform between II and III.

In the Northeast Building (III) there are six limestone column bases *in situ*, averaging 0.60 m. square, and along the front a stylobate of limestone rubble level with the bases. Upon this stylobate are some blocks of breccia which seem to be of later date, as are also the partition rubble walls in the Stoa which cover two of the column bases. A small drum of a column, 0.50 m. in diameter, and having sixteen flat faces, stands upon one of the bases.

The two antæ-caps, C and K on PLATE XXIX., were found on the wall of this Stoa. K may belong to the East Building (IV). C had traces of stucco upon which a fret ornament was scratched and

which was, originally, no doubt, painted. A cornice-block showed a height of 0.15 m., and a small triglyph fragment showed the width to be 0.312 m., whence the following proportions would follow: Height of triglyph, about 0.47 m.; of epistyle, about 0.47 m.; of cornice, 0.15 m., making the total entablature 1.09 m. in height. The corresponding columns would then measure in height about 3.27 m., in



FIG. 54. — ARGIVE HERAEUM: STONE CARVED WITH FISH AND WAVES, BY INCISED LINES.

diameter about 0.60 m.; and if spaced to allow two triglyphs between, there would be seven columns 2.49 m. on centres, as shown on PLATE IX. If spaced with one triglyph between, there would be thirteen columns 1.51 m. on centres, although this



FIG. 53. — ARGIVE HERAEUM: STONE WITH DOVE CARVED IN RELIEF.



arrangement would not allow the front columns to coincide with those of the interior. It is furthermore possible that the building had at one time only a wall in the front with doors and windows, or again a high socle with a colonnade of small columns.

The general character of the masonry indicates that the original building was a refined structure and later in date than Stoa II. The still later interior partition walls and the front breccia wall seem to show that the building was at one time divided into rooms and possibly used as a dwelling by the attendants of the sanctuary or as a treasure-house.

#### EAST BUILDING IV.

Next in order of position, although not in order of chronology<sup>1</sup> is the East Building (IV), which is 28.90 m. (about 96 feet) long over all, by 17.10 m. (about 57 feet) wide (PLATE XII., cf. Fig. 55). The line of its northern wall produced will strike the northeast angle of the existing ramp to the Second Temple (V), leading one to conclude that its orientation may have had some connection with the functions or mysteries of the Temple. The plan of the building resembles somewhat the earlier "Hall of Initiation" at Eleusis,<sup>2</sup> and is nearly the same in length, although less in width. The early *Telesterion* of Eleusis measured about 82 feet square inside, and its roof was supported by five rows of five columns each. The main hall of our building measures inside the walls about 73 feet in length by about 50 feet in width, and its roof was supported by three rows of five columns each. Both buildings had portico entrances; that of ours facing westward, while that at Eleusis faced eastward. A row of columns on the central axis is found in each building and seems peculiar, although it is a feature common in Greek buildings and is structurally a good arrangement, as it gives direct support to the ridge of the roof. The orientation of the main axis of our building is seven degrees south of west. I should place the date of its construction in the latter half of the fourth century B. C. The find of Egyptian scarabs in it suggests that its religious functions may have been allied to the mysterious rites of Egypt.

A fine retaining wall of cut conglomerate stone supports the terrace on the south and east sides (PLATE XIII.). The conglomerate is of rounded pebbles. The wall is built in regular coursed ashlar work with stones about 0.35 m. high, between two other courses about 0.74 m. high, and with an offset at each of the narrow courses. The joints are much mutilated, from which I judge that the stones were originally fastened together by metal clamps which have been stolen. The foundations of the north and west walls and of the central piers or bases are built of *poros* stone. On the north wall are some conglomerate stones, and a few finely tooled limestone blocks with clamp-holes.

I have attempted a free restoration of the building (PLATES VI., XI.), since no definite remains of the superstructure were found. Since the completion of the drawings, how-

<sup>1</sup> A possible chronological sequence of the various constructions might be as follows:—

Old walls.

Cyclopean walls.

Old Temple (I).

Upper Stoa (II) and possibly early construction on the site of the Northeast Stoa (III).

Early structure on site of Northwest Building (VIII).

Part of Lower Stoa (X).

West Building (VII), sixth century B. C.

Early Greek building on site of Roman Building (IX).

Rest of Lower Stoa (X).

Stoa on site of Northwest Building (VII).

Second Temple (V), 420 B. C.

Lower Stoa (VI) and steps, 410 B. C.

Reconstruction of Stoa (III).

East Building (IV), fourth century B. C.

Later construction on Northwest Building (VIII).

Partition walls in Stoa (III).

Roman Building (IX), first century B. C.

<sup>2</sup> Cf. Frazer's *Pausanias*, vol. iii., plan on p. 504.



FIG. 55. — ARGIVE HERAEUM: VIEW LOOKING NORTHEAST UPON THE EAST BUILDING (IV) AND THE RETAINING WALL ON ITS NORTHWEST SIDE.

ever, I have concluded that a corner triglyph of black stone belonged to this building. The form of the clamp-holes and the cut of the grooves indicate fourth century B. C. work, or a date later than the best period. The triglyph measures 0.36 m. wide and 0.67 m. high, which indicates an epistyle about 0.67 m. and cornice 0.26 m., making total entablature 1.60 m. in height. The columns would be about 4.80 m. high, 0.80 m. in diameter, and spaced 2.07 m. on centres. This would give seven columns *in antis* to the front instead of the three shown in the drawings, and would coincide exactly with the total width of the building (cf. Fig. 56).

#### SECOND TEMPLE.

We may now turn to consider the Second, or Fifth Century, Temple (V), where we find ourselves on firmer ground both historically and architecturally; for the principal part of Pausanias's description<sup>1</sup> of the sanctuary is devoted to this temple, while the architec-

<sup>1</sup> Pausanias, II. 17. 3-6: "They say that the architect of the temple was Eupolemus, an Argive. The sculpture over the columns represent, some the birth of Zeus and the battle of the gods and giants, others the Trojan war and the taking of Ilium. Before the entrance stand statues of women who have been priestesses of Hera, and statues of heroes, including Orestes; for they say that the statue which the inscription declares to be the Emperor Augustus is really Orestes. In the fore-temple are ancient images of the Graces on the left; and on the right is a couch of Hera and a votive offering consisting of the shield which Menelaus once took from Euphorbus at Ilium. The image of Hera is seated on a throne and is of colossal size; it is made of gold and ivory and is a

work of Polycleitus. On her head is a crown with the Graces and the Seasons wrought on it in relief: in one hand she carries a pomegranate, in the other a sceptre. The story about the pomegranate I shall omit, as it is of a somewhat mystic nature; but the cuckoo perched on the sceptre is explained by a story, that when Zeus was in love with the maiden Hera, he changed himself into this bird, and that Hera caught the bird to play with it. This and similar stories of the gods I record, though I do not accept them. It is said that beside the image of Hera once stood an image of Hebe, also of gold and ivory, a work of Naucydes. And beside it is an antique image of Hera on a column. But her most ancient image is made of the wood of the wild pear-tree: it was dedicated in



tural remains, although few, are fortunately sufficient to justify a complete restoration of it (cf. PLATE XIV.).

The great revolution in the whole history of the Heraeum is marked by the burning of the Old Temple in 423 B. C. and the erection of this new temple on the second platform. And it is well to recall that, about forty years earlier in the century, the Mycenaeans were finally overcome by the inhabitants of the city of Argos, who thenceforth maintained their absolute predominance on the plain. We expect, therefore, the new buildings to bear the impress of Argive artists; and as the Argive School of Art was in the fifth century rivaled only by that of Athens, we need not be surprised to find the architectural details equalling in beauty and refinement those of the Parthenon.

The first task of the Argive architect Eupolemus and his colleagues was to level the second platform upon which an ancient altar probably stood. The platform consists

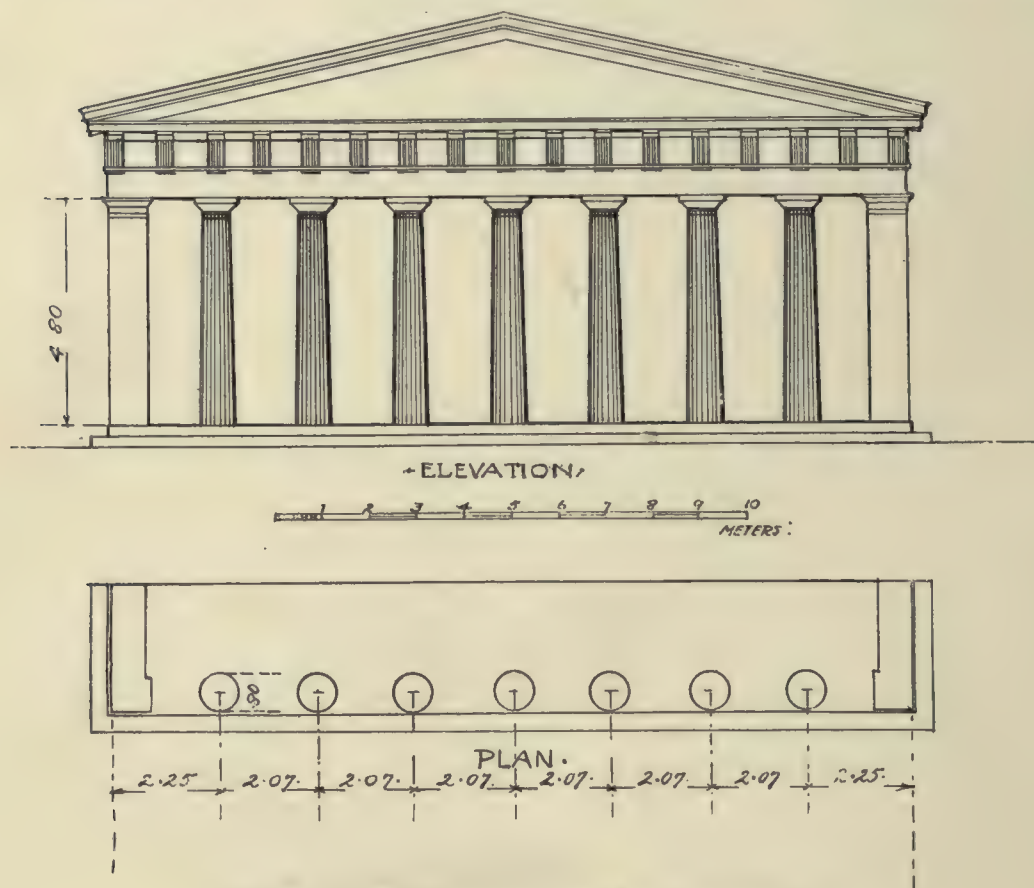


FIG. 56. — ARGIVE HERAEUM: EAST BUILDING, RESTORED.

of a conglomerate rock sloping towards the south. Eupolemus cut away the rock from the north side and filled in the south and west sides, building a retaining wall of *poros* stone outside the wall of the ancient peribolus, which was completely covered and so remained until exhumed in our excavations.

Tiryns by Pirasus, son of Argos, and when the Argives destroyed Tiryns they brought the image to the Heraeum. It is a small seated image: I saw it myself. Amongst the remarkable dedicatory offerings is an altar, on which is wrought in relief the fabled marriage of Hebe and

Hercules. The altar is of silver. Further there is a peacock of gold and shining stones dedicated by the Emperor Hadrian, because this bird is considered sacred to Hera. There is also a golden crown and a purple robe, offerings of Nero" (Frazer). See Introduction, pp. 21 ff.

The retaining wall was built nearly parallel to the new temple on the south and west about 20 m. distant. Along the western side of the terrace, the direction of the wall was regulated by the position of the West Building (VII), which had been constructed in the previous century (cf. PLATE XV.).

Against the southern retaining wall a beautiful Stoa (VI) was built, and a handsome flight of steps leading up from the lower level to the platform of the new temple, both of which I shall describe in order (cf. Fig. 57.).

Turning again to the temple, we find its orientation to be  $16^{\circ} 23'$  south of east. The plan of the present state of the *crepidoma* or foundation walls is shown on PLATES IV.



FIG. 57. — ARGIVE HERAEUM: VIEW FROM THE SOUTHEAST LOOKING UPON THE FLIGHT OF STEPS; THE SOUTH STOA AND THE SECOND TEMPLE ABOVE.

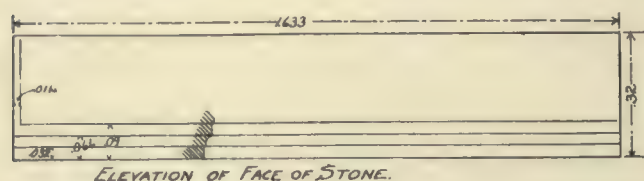
and XVI., the section of the walls on PLATE XI., and the elevation of the south wall on PLATE XIII. These foundation walls measure 39.54 m. along the north edge; 39.65 along the south edge; 20.08 m. and 20.10 m. along the east and west, respectively. The natural conglomerate rock had been carefully cut away and leveled to serve as footing for the northern walls of the crepidoma and the cella. The southern wall of the cella starts from a footing course of large flat irregular stones, while the southern crepidoma walls are carried down to a depth as shown in section (PLATE XI.).

These walls are built of *poros* stone in regular courses of alternate headers and stretchers carefully breaking joints vertically (excepting in one case on an interior pier where the joints coincide in two courses). The average dimensions of these squared stones are 1.20 m. in length, 0.60 m. in width, and 0.37 m. in height. The total width of walls is 3.73 m. The stones are laid up without mortar or clamps, but so nicely fitted that at some of the joints they seem to have grown together.

I shall now describe the course of reasoning which I followed in my restoration of the temple (PLATE XVII.). Fig. 58 shows a beautifully veined limestone block resem-



bling marble. It measures 1.633 m. in length, 0.32 m. in height. The other dimensions could not be measured, as the stone was broken. The face of this stone is cut with a drafted edge at one end, and with two fillets and a slight cove moulding along the bottom.



ELEVATION OF FACE OF STONE.

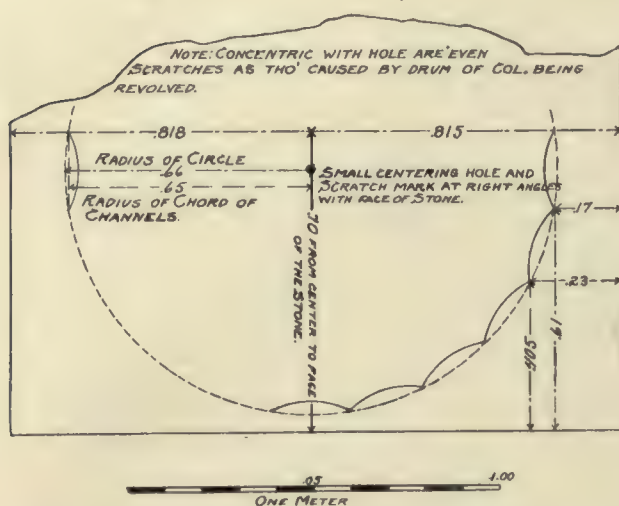


FIG. 58. — ARGIVE HERAEUM: ACTUAL STATE OF A STYLOBATE STONE OF THE SECOND TEMPLE.

tween chords (twice the radius 0.65 m. = 1.30 m.) equal to four units. I found the triglyphs measured two units and the metopes three units. By referring to the elevations (Fig. 59 and PLATE XVIII.), it will be seen at a glance that if the triglyphs are spaced five units on centres, the columns will be spaced ten units on centres, except the corner ones, which, owing to the position of the triglyphs, are spaced one unit less from the next adjacent column or nine units from centre to centre.

Proceeding on this line still further, I found the following proportions developed as shown graphically on PLATE XIX. The front of the temple measures from centre to centre of columns, in units,  $9 + 10 + 10 + 10 + 9 = 48$  units. The height of temple to the under side of the cornice equals 36 units. Considering 48 units the base of a right-angled triangle and 36 units its height, the hypotenuse will be 60 units, which if thrown over and added to the base of 48 units, yields 108 units, or the length of the temple, viz.:  $9 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 9 = 108$ . The above triangle may have

<sup>1</sup> In this connection, I wish to express my obligation to Dr. Dörpfeld, who first discovered, when looking over my note-books and diagrams, that the measurements shown by the stone in question coincided with the unit of measurement at Olympia, or about 0.326 m., being  $\frac{7}{8}$  of an inch longer than the English foot, which equals 0.304 m.

Its top shows sufficient traces of the *scamilli* to determine exactly the size of the base of the columns. The channelings cut on the stone were sufficiently intact and clear to enable me to find the centre of the circle by erecting perpendiculars to the chords of two flutings. At the intersection of these perpendiculars I found a small centring hole and a mason's scratch-mark at right angles to the face of the stone. One leg of the mason's compass had been set in the hole, and with the other a radius of 0.66 m. had been marked off on the stone. The radius to the chord of the channelings is 0.65 m.

These dimensions are of especial interest, as they give a clue to the unit of measurement which I found prevailed throughout the building.<sup>1</sup> The Greek unit equals 0.326 m., making the length of the stone, as before given, 1.633 m., equal to five units, and the diameter of the columns be-

Many of the minor measurements seem to indicate that the unit may have been subdivided into twelfths, like the English foot, as follows:—

$\frac{1}{12} = .027$ —	$\frac{4}{12} = 1.08$ —	$\frac{7}{12} = 1.90$ —	$\frac{10}{12} = 2.71$
$\frac{2}{12} = .054$ —	$\frac{6}{12} = 1.35$ —	$\frac{8}{12} = 2.17$ —	$\frac{11}{12} = 2.98$
$\frac{3}{12} = .081$ —	$\frac{9}{12} = 1.63$ —	$\frac{9}{12} = 2.44$ —	$\frac{12}{12} = 3.26$

each side divided by 12, reducing it to 4 for base, 3 for height, and 5 for hypotenuse, which is the simplest right-angled triangle known.<sup>1</sup>

To return to the detailed reconstruction of the temple: I found several *poros* stone capitals with well-preserved profiles. The firm line of the echinus (Fig. 51, A, and Fig. 52, A) and the general proportions of the capital closely resemble those of the Parthenon. The width of the abacus is 1.36 m. or, like the Parthenon, a little more than the



FIG. 59. — ARGIVE HERAEUM: FRONT ELEVATION OF SECOND TEMPLE. RESTORED BY EDWARD L. TILTON.

diameter at the base of the column; the height of abacus is 0.24 m., equal to  $\frac{9}{12}$  of a unit; the height of the echinus including annulets is 0.203 m., and height of the neck is

<sup>1</sup> This proportion of the length equaling the width plus the hypotenuse of a triangle which has as its third side the height to the cornice prevails here because the temple has but twelve columns on the side. A similar proportion may be found in these hexastyle temples: that of Zeus at Olympia, the "Theseum" at Athens, and the temple of Poseidon at Paestum, if limited to the twelfth column on the side and if this twelfth column is spaced as a corner column.

I found another series of equations as follows: The width of temple to outside of columns (see PLATE XIX.) is 52 units, its corresponding length is 112 units, and its height to top of corona is 37 units, whence developed —

37 is to 52 as  $2\frac{1}{2}$  is to  $3\frac{1}{2}$ , or  $37 \times 3\frac{1}{2} = 52 \times 2\frac{1}{2} = 130$ , and

37 is to 112 as  $1\frac{1}{2}$  is to  $4\frac{1}{2}$ ,  $37 \times 4\frac{1}{2} = 112 \times 1\frac{1}{2} = 167$ . Or the height to the width of the temple is as in the major scale in music, viz.: two full tones and a half tone to three full tones and a half tone, and height is to length of temple as in the minor scale in music, viz.: one full tone and a half tone to four full tones and a half tone. I cite this analogy because so much has been written about the relation between Greek architecture and music, although I do not suppose that any such musical proportion was considered by Eupolemus. It does convey the idea, however, that what is pleasing to the eye may bear a certain harmonious relation to that which is pleasing to the ear in music, and to the mind in geometry and mathematics.



0.127 m., which together is 0.33 m., equaling one unit or one fourth of the diameter of the column at base. Dowel-holes exist both in the top and bottom of capitals, one measuring  $0.15 \times 0.17$  m. and 0.20 in depth (cf. Fig. 51, A). The diameter of the hypotrachelium between bottom of channels is .967 m. or three units, exactly the proportion of the Parthenon. I found several drums of *poros* stone which fitted properly one over the other (cf. Fig. 60), the lower one agreeing exactly with the *scamilli* on the above-described stylobate stone (Fig. 58). Some of the drums measured slightly longer on one side than on the opposite, and doubtless inclined inward toward the building, a refinement practiced in the best period.<sup>1</sup> The columns had twenty channelings. The length of the chord of a channel at the hypotrachelium measured .16 m. or one half of a unit; the depth of the channel was .013 m. Slight vestiges of plaster remained which originally no doubt covered the columns to offer a smooth surface for painting. I determined the heights of column drums as follows, beginning with the bottom (cf. Fig. 60) (the interrogation mark indicates that the exact height was not found): .87 + .86 + .86 + .86 + .84? + .84? + .84 + .84? + .57 m., making a total, including capital, of 7.38 m. or  $22\frac{8}{12}$  units or 5.67 diameters. The Parthenon columns measure 10.42 m. or 5.29 diameters. The columns of the "Theseum" measure 5.72 m. in height or 5.55 diameters.

I arrived at the dimensions of the entablature as follows: —

A fragment of *poros* triglyph gave the distance between centres of glyphs as scant 0.22 m.; three times which showed the total width of triglyph to be 0.65 m. or two units. The total height of triglyph of this period is about  $3\frac{1}{6} \times \frac{1}{2}$  their width, which in this case would be  $3\frac{1}{6} \times .325 = 1.029$  m.

In temples of this period the height of the epistyle equals the height of the triglyphs; a fragment of the epistyle confirmed this measurement by showing the taenia to be 0.09 m. high, and the regula 0.06 m.

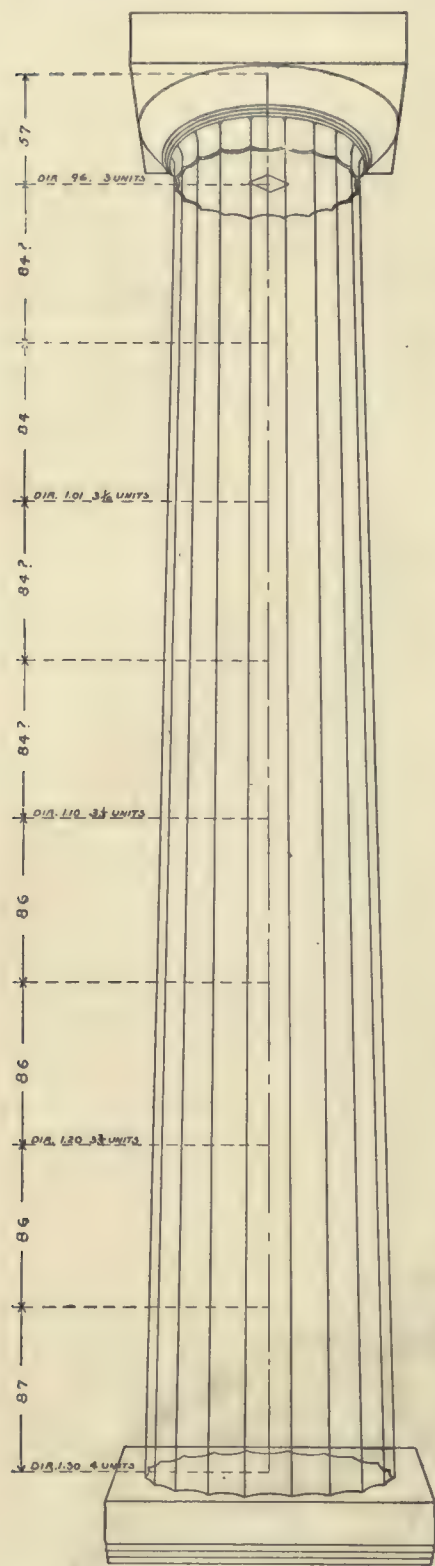


FIG. 60. — ARGIVE HERAEUM: COLUMN AND STYLOBATE STONE OF SECOND TEMPLE.

<sup>1</sup> Since none of the stylobate stones remained *in situ*, I was unable to ascertain whether there were any of the refined curves which Penethorne discovered as having prevailed throughout the Parthenon; but judging from the general beauty of detail in the existing fragments, it would seem that every aesthetic refinement known at the time must have been practiced in the design and construction of this Argive temple.

high, which are in due proportion for an epistyle 1.02 m. high.<sup>1</sup> Remains of stucco adhere to this epistyle fragment.

The guttae under the regula were 0.058 m. in diameter. A cornice block (*geison*), also of *poros* stone, gave the width of the mutules as 0.64 m., the diameter of their guttae as 0.055 m., and their distance on centres, 0.115 m. The mutules were spaced 0.172 m. apart, making the distance from centre to centre of the mutules over the triglyphs 1.624 m. or (practically 1.63 m.) = 5 units. The height of the face of the cornice from the top of mutules to the top of the beak-moulding was 0.315 m.; add the height of mutule, 0.047 m., and we have 0.362 m.

We now have the total height of the entablature as follows:—

Epistyle . . . . .	1.029
Frieze . . . . .	1.02
Cornice, omitting cyma or crown moulding . . . . .	.362
	<hr/>
	2.411 m.

This is a little less than one third the height of the columns, which, as above shown, was 7.38 m. The exact proportion is as 1 to 3.05. The proportions in the Parthenon are as 1 to 3.07.<sup>2</sup>

The slope of the pediment I could not verify exactly, so I assumed the height of the tympanum equal to one ninth of the total length of the horizontal cornice,<sup>3</sup> which is equal to the width of eleven triglyphs at 0.652 m., or 7.17 plus ten metopes at 0.978 m. or 9.78 m. plus the overhang of the cornice at each end, which, omitting the beak-moulding, is 0.49 m., and for both ends is 0.49 m.  $\times$  2 or 0.98 m. The total horizontal length therefore is 17.93 m., which equals 55 units.

The height of the tympanum is  $\frac{1}{9} \times 17.93$  or 1.99 +.

The height from the stylobate to the apex of the tympanum is therefore shown to be as follows:—

Columns . . . . .	7.38 m.
Entablature . . . . .	2.41 m.
Tympanum . . . . .	1.99 m.
	<hr/>
	11.78 m.

This is almost exactly 36 units (cf. PLATE XIX.).

The cyma-moulding and lion's head water-spouts are shown in detail on Figs. 61, 62. They are of white marble. In this connection I may remark that white marble is the material which was used for all the sculpture and carved portions of the temple, i. e. the metopes, the pediment figures, and the cyma-mouldings, and for the roof tiles as well. The crown-mould of the cornice or cyma is beautifully carved in high relief with the conventional anthemion ornament interspersed with Hera's typical bird, the cuckoo-dove (*Macropygia*?), symbolical of gentleness, peace, and love.<sup>4</sup> The anthemion ornament was frequently used to decorate the cyma during the best period of Greek art, but

<sup>1</sup> I made the measurements with great care, but owing to the worn condition of many of the stones and the slight differences caused by the stucco, absolute accuracy could not be assured. In the drawings of the restored elevations the epistyle is a little too low and the frieze as much too high, making the total height correct.

<sup>2</sup> P. Fauré, *Théorie des Proportions en Architecture*, Paris, 1893, plate 16.

<sup>3</sup> This pitch is a little steeper than that of the Parthenon, but nearly the same as that of the "Theseum" and less than that of the temple at Sunium.

<sup>4</sup> Compare the old stone, Fig. 53, and the Argive coin which shows Hera's crown ornamented like the cyma with anthemion (Fig. 12), and again her sceptre as described by Pausanias (cf. Note on p. 117, and Fig. 64).





FIG. 61.—ARGIVE HERAEUM: MARBLE CYMA-MOULDING AND LION'S HEAD WATER-SPOUT FROM SECOND TEMPLE: ONE FIFTH THE ACTUAL SIZE. MEASURED AND RESTORED BY EDWARD L. TILTON.

in other examples which are left to us it is only painted; this carved cyma is therefore quite unique. I found a great many fragments of the cyma, some well preserved and others much weathered, probably due to their relative exposures on the north and south sides of the temple. A difference in execution was also discernible, showing that different carvers had been employed. The profile of the moulding is shown in Fig. 62; its height over all is approximately 0.27 m. or  $\frac{10}{12}$  of a unit, or about equal to the combined heights of the cornice fascia and beak-moulding. The broad fillet of the cyma is 0.075 m. high, the small moulding at top 0.028 m. and the overhang is 0.03 m. beyond the line of its fillet.

Many fragments of lion's head water-spouts were found attached to portions of the cyma and well carved from the same white marble. They are superior in design and execution to most of such gargoyles as are left to us from the temples of the period. Several of these heads, which were almost perfect, were of two sizes. In my restoration I have placed the larger head over each column and two smaller ones between, as this arrangement seemed to space properly when laid out full size with the anthemion.

The roof of the temple was covered with white marble tiles, which, we are told by Pausanias, had been used at Olympia about forty years earlier.<sup>1</sup> PLATE I. (Frontispiece of this chapter) shows the details. The width of the flat tiles was about 0.54 m. or  $\frac{1}{2}$  units.

The ridge-tiles covering the joints were 0.19 m. or  $\frac{7}{12}$  units wide. Every alternate ridge-tile was carried down and attached to the back of the cyma, while those in a line with the lions' heads were closed at the ends and stopped about a half length back of the cyma to allow the water to run out of the lions' spouts.

<sup>1</sup> In describing the Temple of Zeus at Olympia, Pausanias writes (V. 10): "The architect was Libon, a native. The tiles are not of baked earth, but of Pentelic marble, which is wrought into the shape of tiles. They say that this was a contrivance of Byzes, a Naxian, who is said to have made the images in Naxos which bear the following inscription:—

"Euergus, a Naxian, dedicated me to the offspring of Latona, Euergus, son of Byzes, who first made tiles of stone."

"This Byzes lived in the time of Alyattes, the Lydian, and of Astyages, the son of Cyaxares, king of the Medes."

The groups of sculpture shown in the pediment and the metopes in the restoration are composed entirely from imagination to give the possible appearance of the original temple. We know in general, however, from Pausanias <sup>1</sup> that the subjects of the sculptures were "The Birth of Zeus," "The Battle of the Gods and Giants," and "The Siege of Troy and Taking of Ilium." One of the pediment groups probably illustrated "The Birth of Zeus." Fig. 63 shows a fragment of metope with a possible restoration, which is offered to show how some of the larger torso fragments and heads found may properly belong to the metopes.<sup>2</sup>

Before entering the temple, we may consider its plan more fully. The temple was a hexastyle-peripteros-pycnostyle, having six columns at each end, twelve on the side, and with intercolumniations of one and one half diameters. The restored plan is shown on PLATE XVII. The inside of the foundation is indicated by the dotted line which shows that the corner columns centre over a 45° line that connects the outer and inner angles of the foundation.<sup>3</sup> The *pteroma* was paved with limestone similar to that of the stylobate. These paving stones are shown square on the plan, although many were oblong; beneath them were breccia blocks which rested on the *poros* stones of the foundation. The walls of the cella were, I think, of *poros* stone, like the columns, and similarly plastered with stucco. The ceiling of the *pteroma* was coffered and formed of limestone, the sides of each lacuna being decorated with a fret ornament cut in the hard stone to a depth of two millimetres.<sup>4</sup>

The plan of the temple developed certain proportions, graphically illustrated on PLATE XIX., which I discovered after the completion of the plan of the restoration. The width of the cella is  $\frac{3}{5}$  of 48 units, or  $\frac{3}{5}$  of the width of the front of the temple between the axes of the end columns. The distance from the axis of the sixth column on the side to the anta of the cella wall is 36 units, which equals the height of the temple to under side of roof. The distance measures also 36 units from the same anta to a line tangent to the columns on the opposite side. Again a triangle with a height of 36 units and a base equal to the width of the cella will have a hypotenuse which, if swung around and added to the height, will give the total length of the cella.

The approach to the temple is by a ramp similar to that of the temple of Zeus at Olympia.

In Fig. 64 I have attempted a restoration of the interior of the temple.<sup>5</sup> The height



FIG. 62. — ARGIVE HERAEUM: MARBLE LION'S HEAD GARGOYLE AND WATER-SPOUT FROM SECOND TEMPLE. ONE FIFTH THE ACTUAL SIZE.

<sup>1</sup> Cf. Note on p. 117, and Introduction, pp. 21 ff.

<sup>2</sup> For the architectural sculpture see the next chapter.

<sup>3</sup> As it was more usual to have an uneven number of columns on the side of the temples of this period, I at first attempted a restoration of this one with thirteen side columns, but found afterwards, upon piecing together the fragments of the entablature, that twelve columns fitted exactly both the superstructure and the crepidoma.

The intercolumniations equal one and one half diameters, making a pycnostyle, the proportion usual for the best fifth century work.

<sup>4</sup> I found stones from the ceiling and the crepidoma of the temple built into the walls of the Chapel of the Panagia near the village of Merbaka.

<sup>5</sup> For sections through the entablature see PLATE I., frontispiece of this chapter.



from floor to ceiling as shown is about 8.60 m. The seated figure of Hera is based on the description of Pausanias (see note on p. 117, and above, pp. 21 ff.), and upon representations of the goddess found on Argive coins. It is interesting to note that her crown or στεφάνη was decorated with ornament which resembled the cyma-moulding described above.<sup>1</sup> The details of the throne are partly taken from Laloux's restoration of the statue of Olympian Zeus.

The interior columns in the *naos* I have restored as shown in Fig. 52, B. The *poros* stone capital for the lower column (Fig. 51, F) I found in the museum at Argos. It has no remains of channels, but it has square dowel-holes at top and bottom, and on opposite sides of the neck there are round holes, as though a grille of metal had been secured between the columns. The capital for the superimposed columns, also of *poros*

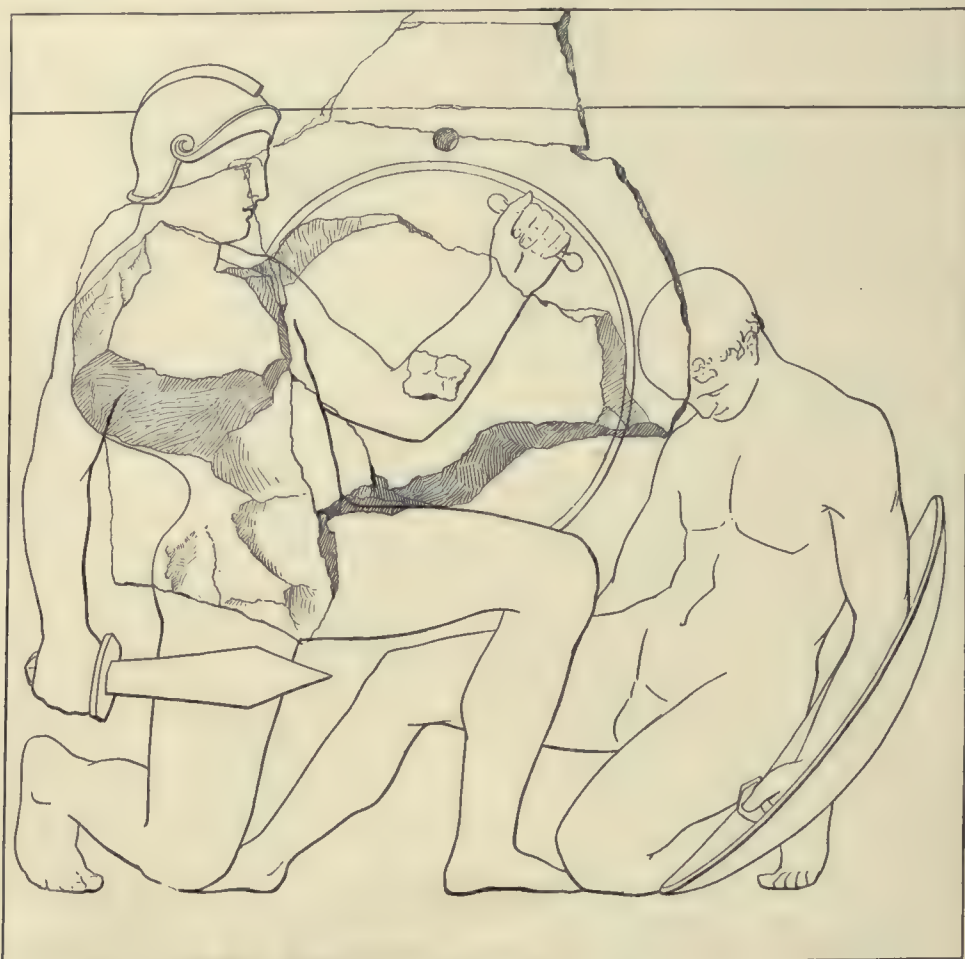


FIG. 63. — ARGIVE HERAEUM: METOPE FROM THE SECOND TEMPLE, RESTORED FROM FRAGMENT.

stone, I found lying in the West Building (VII). It has a profile almost straight, square dowel-holes, and a section cut out of the echinus, as shown in Fig. 51, L, as though a wooden upright had been fastened to the column.

<sup>1</sup> Cf. Waldstein, *Journal of Hellen. Studies*, XXI. (1901) pp. 31 ff.



FIG. 64. — ARGIVE HERAEUM : RESTORED SECTION OF SECOND TEMPLE, SHOWING STATUE OF HERA.

NOTE. — For the correct section through entablature see PLATE I.

#### SOUTH STOA.

If we leave the Second Temple and turn to the right, we soon reach the head of the beautiful flight of steps which descends to the lower level and to the South Stoa (VI). (Cf. PLATE IV.)

The actual state of the ruins is shown on PLATES XX. and VII., and Figs. 57 and 65. On PLATE XX. the height of the various objects is indicated by the shadows, which upon all the drawings are projected at  $45^{\circ}$ . The Stoa measures, inside the walls, 44.45 m. in length, including walls 46.09 m., and from the inside of the rear wall to the outside of the stereobate 12.74 m. The stereobate is 1.08 m. in width. The long axis of the Stoa is  $16^{\circ} 30'$  south of east, and its level is 22.93 m. below that of the Old Temple. The rear wall is 21 m. south of the Second Temple foundation, and is nearly parallel to it. The face of the rear wall consists of light limestone, the joints are very close, and the tops of the stones are fastened together with clamps about 0.60 m. long of the double T-shape which were used in the fifth century B. C. and thus aid in establishing the date of the building. The existing wall has three offsets of 0.065 m., and the height of the first course above grade is 0.20 m., of the second 0.37 m., and of the top one 0.39 m. There are four projections from the rear wall (cf. Fig. 65) resembling pilasters and possibly intended to take trusses, although the projections do not all



exactly coincide with the columns in front of them. The lower portions of the end walls are also constructed of light limestone, forming socles or dados (as shown on PLATE XI.) to the height of the rear courses (cf. also Fig. 65). The base of the dado is 0.26 m. and the main course 0.86 m. in height. Over this are three courses of *poros* stone each 0.35 m. high. The Stoa was built against the retaining wall of the terraces which had been previously constructed of *poros* stone fastened together with T-clamps. The retaining wall is about two metres thick, and is strengthened by buttresses  $2.00 \times 1.80$  m. extending into the bank. Still farther back are the two ancient graves, and a portion of the old peribolus wall described above (cf. PLATES XX. and VII.). On the floor of the Stoa there still remain nine limestone column-bases of the dimensions and spacing as are shown on the plan. The existing crepidoma or stereobate is carefully built of *poros* stone, the blocks averaging in size  $1.20 \times 0.60 \times 0.35$  m. The architectural fragments that were found were sufficient to enable me to make a restoration of the Stoa which is shown on PLATE XXI. Owing to the variation in the width of several of the metopes, it seemed possible to restore the Stoa with either seventeen or nineteen columns along the front; the latter I am convinced is really the correct solution (PLATE XXI.), as this arrangement makes every other column of the front coincide with a column in the centre, and it makes the relation of diameter to intercolumniation about as 1 is to  $1\frac{1}{2}$ , a pycnostyle arrangement like that of the Second Temple, while the wider metopes fit on the end walls.

The profiles of the columns resemble those of the temple (cf. PLATE XXII. and Fig. 52, D).

Four interior bases had column-drums *in situ*, the most eastern base having two drums erect, while the remaining drums and capital of this column, all of *poros* stone, were lying prostrate as is shown in section (PLATE XI. and Fig. 65). Traces of stucco painted yellow were apparent on the drums, and red paint on the echinus of the capital. Vestiges of stucco were visible also on the entablature.

I shall letter the drums downward from the top as A, B, C, D, E, F, beginning with the capital, and give the height and the bottom diameter of each measured between the chords of the channels.

									DIAMETER.	HEIGHT.
Capital	.	.	.	.	.	.	.	.	.663	.458
A	.	.	.	.	.	.	.	.	.704	.964
B	.	.	.	.	.	.	.	.	.743	1.025
C	.	.	.	.	.	.	.	.	.78	1.015
D	.	.	.	.	.	.	.	.	.812	1.015
E	.	.	.	.	.	.	.	.	.846	1.03
F	.	.	.	.	.	.	.	.	.87	.85
Total height of columns . . . . .										6.357 m.

— which is exactly  $19\frac{1}{2}$  units of 0.326 m. each.

The height of the column is equal to 7.30 diameters of the base, which at first appears out of proportion for Greek work of this period, but by referring to the section (PLATES XI. and XXII.) it will be observed that these interior columns support only a wooden roof, whereas the outer columns are one drum less in height, or 5.342 m., which is about 6.16 diameters.<sup>1</sup>

<sup>1</sup> At Olympia the interior columns of the Buleuterion are 7.70 diameters in height and the columns of the front in the Echo Colonnade are 6.40 diameters high, the diameter being measured just above the plinth. The Leonidaeum columns are 6.42 diameters high.

Some of the column-drums measure one centimetre higher on one side than on the other, indicating that they inclined slightly inwards. The drums had dowel-holes at both top and bottom, about 0.10 m. square and 0.10 m. deep, with an offset. The capitals had similar dowel-holes and mason's scratch-marks to show the centres. The abacus is 1.03 m. square and 0.18 m. high; the echinus, annulets, and neck together, 0.278 m. in height.

The entablature of *poros* stone, stuccoed and painted, and the cyma, with its fillet, was of terra-cotta. The epistyle was 0.71 m. high, and was made up of two stones in thickness 0.426 m. each, together equaling the diameter of the column at its base. The triglyphs were 0.77 m. high.

The top of the epistyle had a scratch-mark to show the location of metope, 0.045 m. back from the face of the fillet. One of the epistyle blocks had on its face under the



FIG. 65. — ARGIVE HERAEUM: VIEW LOOKING EAST ON THE SOUTH STOA (VI).

Note the fine rear wall with its pilaster-like projections, and the column-drums and bases. Mount Arachnaeum shows in the centre distance.

centre of a triglyph a small hole which may have been made by a nail that secured a bronze or other ornament.

It is interesting to note that the unit of measurement of the temple, equal to 0.326 m., prevailed throughout this Stoa.

The clue to the restoration is given by a cornice (*geison*) block whose mutules were 0.475 m. wide and spaced 0.097 m. apart; and as a mutule is the width of a triglyph and every alternate mutule centres over a metope, we have the width of the triglyph 0.475 m., and of the metope  $0.097 + 0.475 + 0.097$  m. = 0.669 m., making the distance from centre to centre of the triglyphs  $0.475 + 0.669$  m. = 1.144 m. Twice this, or 2.288 m., gives the spacing between column centres, but 2.288 m. is seven units (within six millimetres



or one fourth of an inch). The distance from each end column to the outside of the anta is a half triglyph more, or 2.52 m. =  $7\frac{8}{12}$  units, which gives a total as follows: —

Spacing at ends . . . . .	$7\frac{8}{12} \times 2 = 15\frac{4}{12}$ units
Spaces between columns . . . . .	$18 \times 7 = 126$ “
	<hr/> 141 $\frac{4}{12}$ “

141 $\frac{4}{12}$  units at 0.326 m. equals 46.07 m. This is only two centimetres (three fourths of an inch) less than the measurement of the actual ruins given above, viz.: 46.09 m. This gives nineteen columns to the front or one opposite each interior column and one opposite each space between.

For the end walls a corner triglyph measured 0.428 m. wide on one face and 0.363 m. on the other. I found that eleven times 1.144 (the width of triglyphs and metope as above) plus 0.428 gave 13.01 m. which coincided with the actual measurements of the ruins. This distance, 13.01 m., furthermore, equals 40 units.

To return to the front, the entire height of the order is, as before shown: —

Columns . . . . .	5.342 m.
Epistyle . . . . .	.71
Triglyph . . . . .	.77
Cornice from top of beak-moulding to bottom of mutule which lines with the top of triglyphs . . . . .	.295
	<hr/> 7.117 m.

This is nearly 22 units (22 units would be 7.172 m.), and I found the difference accounted for by a terra-cotta fillet which fitted into the cut above the beak-moulding as shown in the detail on PLATE XXII. The fillet is described below.

The height of the entablature, which is made up of the sum of epistyle, triglyph, and cornice, as above, is 1.775 m., and is thus one third the height of the columns.

The cyma was .20 m. high, of colored terra-cotta, shown in detail on PLATE XXIII., G.

The different pieces of terra-cotta cyma probably were secured by a rod running through the hole. A violet line, 0.023 m. wide, along the under side showed that the cyma overhung the fillet so far.

The fillet below the cyma was a flat terra-cotta band, 0.07 m. high, decorated with a fret similar to that attached to the antefix (PLATE XXIII., B). The soffit of this band was painted for a distance of .08 m. back from its face, showing that it overhung the beak-moulding of the cornice, and it had a projection cast on it which fitted into a cut on the top of the cornice and was thereby kept in place. (Cf. detail section, PLATE XXII.) I found a fragment of a painted terra-cotta lion's head, from which I restored the entire head, as shown in the upper right-hand corner of PLATE XXII., and assumed that it belonged to this Stoa. A small piece of a ridge-antefix similar in design (PLATE XXIII., C) also may have belonged to this building.

#### THE STEPS.

Our attention is next naturally directed to the broad flight of steps which lead up to this Stoa from the south and continue upward along the east side to the level of the temple. The length of the flight in all was 81 m., or about 25 units; its run about 30 m. and

its rise about 13 m. The eastern retaining wall (shown on PLATE XIII., A) resembled that of Building IV., the stone work being laid in courses where two wide courses alternate with one narrow course. At an obtuse angle from this wall ran another in the form of high steps, each course being about 0.75 m. wide and of the same height. The remains of the main flight of steps under consideration consist of *poros* stones carefully jointed but without clamps. The finished steps were probably limestone. The width of the treads measured on the *poros* foundations is about 0.45 m., and the rise 0.32 m. Portions of the foundation stones were, fortunately, *in situ* at the eastern end and half way up the slope, which indicated that the steps had been continued to the temple terrace.

In my restorations I have placed an altar at the head of the steps on the rectangle of old walls, upon which the *Phylakeion* now stands, and various cuttings in the stones imply that other altars and stelae may have been placed at different levels on the steps.

#### WEST BUILDING.

The next building in order of position is the so-called West Building (VII), of which I have attempted two free restorations, one shown in the perspective on PLATE VI. and the other in Fig. 66, but owing to the insufficiency of data, for neither of them can I claim any certainty. The ruins are, however, of interest.

The orientation of the building is  $8^{\circ} 30'$  east of north, and its level is 21.35 m. below that of the Old Temple. The foundations measure over all 33.30 m. along the east side and 30.40 m. along the south; allowing for offsets, the main walls must have measured almost, if not exactly,  $100 \times 90$  units of 0.326 m. each. It is much older than the Second

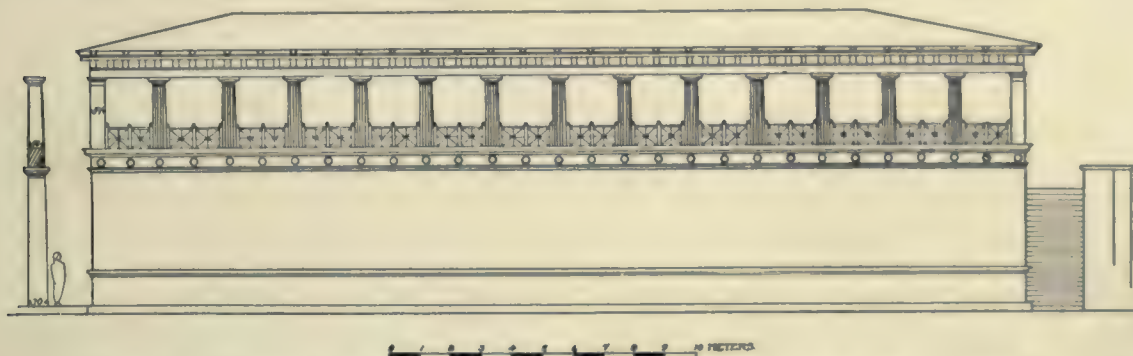


FIG. 66. — ARGIVE HERAEUM: WEST BUILDING; FREE RESTORATION OF THE ELEVATION.

Temple and probably dates from the sixth century B. C., as is indicated by (a) the paving stones in the central court, (b) the dove-tail clamps, (c) the columns whose channels are fourteen and sixteen in number instead of twenty, and (d) the spread of the echinus of the capitals, as is shown in detail in Fig. 51, E, I, and K. (See PLATE XXIV.)

The building lay outside the original walls of the peribolus on the south side of an early road which led up to the sanctuary. The ground for the building had been leveled by cutting away the native conglomerate rock (at the northeast corner to a depth of nearly five metres), and by filling in the lower sides against retaining walls previously constructed. The walls remaining along the south (PLATE XIII.) and half of the eastern sides are of fine light limestone with tooled faces and carefully fitted joints. The backs of the stones are irregular, having been buried in the earth. The western retaining wall



was built of larger blocks many of which had been later removed, thereby causing the partial destruction of the terrace. These walls on the west side appear to be older than the others, and may have belonged to an earlier Stoa to which was added later the rest of the building. The foundation stones of the north and east sides are of regular *poros* blocks similar to those of the temple and as carefully fitted and leveled (cf. PLATE XXV.). The plan of the building comprised a peristyle court with five columns on the north and south sides and six on the east and west, counting the corner columns twice. The positions of several of these columns are shown by the circles on the limestone base course. The distances between the centres of corner columns measure 13.10 m. and 10.90 m., or about 40 and 33 units. The main entrance to the building was on the north side, where a limestone sill  $0.75 \times 1.73$  m. has two dowel-holes about one metre apart and 0.35 m. from the stone jambs, indicating wooden casings (see the plan). The door opens into a vestibule about 2.50 m. wide and 6.50 m. long leading to the central court. Three rooms, each about  $6 \times 8$  m., occupy the remainder of the north side of the building. On the other three sides the roof-span is supported by columns whose spacing is somewhat irregular. On PLATE XXIV. the present state of the building is shown; on PLATE XXVI. I show a plan and section restored, and in Fig. 52, C, a detail of the columns.

The original destination of the building is uncertain, and conjecture has made it a gymnasium. Its location, however, and arrangement lead me to think that it may have been a hospital especially for women, which would be a natural accessory to the Heraeum, whose goddess was the special patroness of births and marriages. In the two rooms flanking the vestibule were benches or couches, shown on PLATE XXIV. These couches consist of upright blocks of limestone rebated 0.05 m. deep into the base course of the rooms. The uprights are  $0.25 \times 0.75$  m. and 0.55 m. high with dowel-holes in their upper surfaces by which the horizontal slabs were secured. Lead is still visible in one of the dowel-holes. The distances between the uprights varies, as is shown on the plan, from 1.22 to 1.45 m., to which the addition of twice 0.25 m., the width of the uprights, makes the total length 1.72, 1.95 m. The width of couches, as similarly indicated, was one metre. It is possible that the horizontal slabs overhung the supports both in length and width, and they may have been of wood, since I found no stone which fitted the position.<sup>1</sup>

The most easterly of the three rooms has no indications of stone couches, and may have been used as a strong room to keep the gifts, money and tokens, received from the patients. It had a noteworthy limestone door, a fragment of which is shown on PLATE XXVI. (cf. PLATE XXV.). The pivot was 0.10 m. in diameter, cut from the solid stone of the door, and originally it revolved upon a bronze plate let into the dowel-holes in the limestone door-sill.<sup>2</sup>

The right side of the door-sill is worn more than the left, indicating that the corresponding valve of the door was more frequently used. The dimensions of the door-sill are shown on PLATE XXVI., and the sunken cuts at either end indicate that there were wooden door-jambs.<sup>3</sup> The doors were evidently fastened by a bolt which slipped into the rebate shown on the face of the sill. The stone step inside of this room was

<sup>1</sup> For couches of similar construction found in a rock-cut grave on Aegina see *Expédition de Morée*, III. p. 40. Also Guhl and Koner, *Life of the Greeks and Romans*, Figs. 102 and 103.

<sup>2</sup> For a similar stone door see the marble door from

a grave at Palitiza now in the Louvre; Heuzey, *Mission Archéologique de Macedoine*, pl. xxi.

<sup>3</sup> For the arrangement of wooden door-jambs and casings, see Durm, *Die Baukunst der Griechen*, and also the Olympian Heraeum in the German work on Olympia.



FIG. 67. — ARGIVE HERAEUM: VIEW LOOKING NORTHWEST UPON THE NORTHWEST BUILDING (VIII).

Mycenae lies among the hills in the right distance.

made of pieces which were secured together by metal clamps. Flanking the doorway on the east side are two *poros* stones with centres carefully hollowed out, although for what reason is uncertain.

In the central court we find an old paving of irregular blocks not unlike that on the Old Temple terrace. Over this older paving was a better one of limestone blocks, about flush with the podium or stylobate, with which, in the plan of the restoration, I have shown the entire building to have been paved. From the court a stone drain carried the water beneath the floor and through the south wall.

The only column-drum remaining upright is on the northeast base (cf. PLATE XXV.). It measures 0.58 m. in diameter between the chords of the opposite flutings, which are sixteen in number.

The only fragments I found with which to attempt a restoration were the small *poros* stone capitals (Figs. 51, E, I, and K), each with only fourteen channelings, the capital B with sixteen channelings, and the pieces of entablature (PLATE XXVI.), cornice, triglyph, and epistyle stones; and as regards the cornice block, I am in some doubt, since the shape of the clamps would indicate a later building. This apparent discrepancy may be accounted by supposing that the building had been, at a later time, reconstructed or repaired. In other respects, the stone might have belonged to this structure. Another block which resembles it has the earlier dovetail-shaped dowel-hole, and still another has a very large T-shaped hole, as though to take a dowel of wood instead of metal. The lifting-holes are shown on the top of the stone. The mutules alternate with rows of five and four guttae, and I found one which had been repaired by fastening a gutta in place



with lead. The epistyle block also has but five guttae under the regula. The face of the cornice is plain and may have been covered with terra-cotta like that of the Treasury of Gela at Olympia, since a nail-hole is seen on one of the cornice stones.

The soffits of the cornice bear evidences of red paint. The cyma may have been as on PLATE XXIII., D.

The southern outlook over the plain from the site is so beautiful that one might expect



FIG. 68. — ARGIVE HERAEUM: VIEW LOOKING WEST FROM THE NORTHWEST BUILDING (VIII).  
The men are excavating the Roman Building (IX).

an open colonnade on this side, but the existing walls evidently did not support columns. In order to harmonize the idea of a wall with a colonnade, I have made a sketch as a suggestion in Fig. 66.

#### THE NORTHWEST BUILDING.

In the Northwest Building (VIII) there is still less to guide one in attempting a restoration (cf. Fig. 67, and PLATE XXVII.). The rough walls are built over limestone bases, which indicate an earlier Stoa. It is possible also that this may have been the site of an ancient Propylaeum. I think the capital P, Fig. 51, shown again in Fig. 52, F, may have belonged to the late building on this site.

#### THE ROMAN BUILDING.

The remains of the Roman Building (IX) (PLATES XXVIII. and XXIX., and Fig. 68), are somewhat confused, but the construction of the floor is interesting. An earlier Greek structure had occupied the eastern part of this site, the remains of which are a finely cut limestone wall, door-sill, *poros* stone foundation, and a fragment of mosaic floor,

shown in detail on PLATE XXIX., W. The Roman floor-level was about 0.56 m. above that of the Greek. On the plan in PLATE XXVIII. the four irregular circles are indications of what appear to be cisterns, which were in depth from 1.50 to 3 m.

The principal interest in the building centres in the hypocaust or hollow floor and

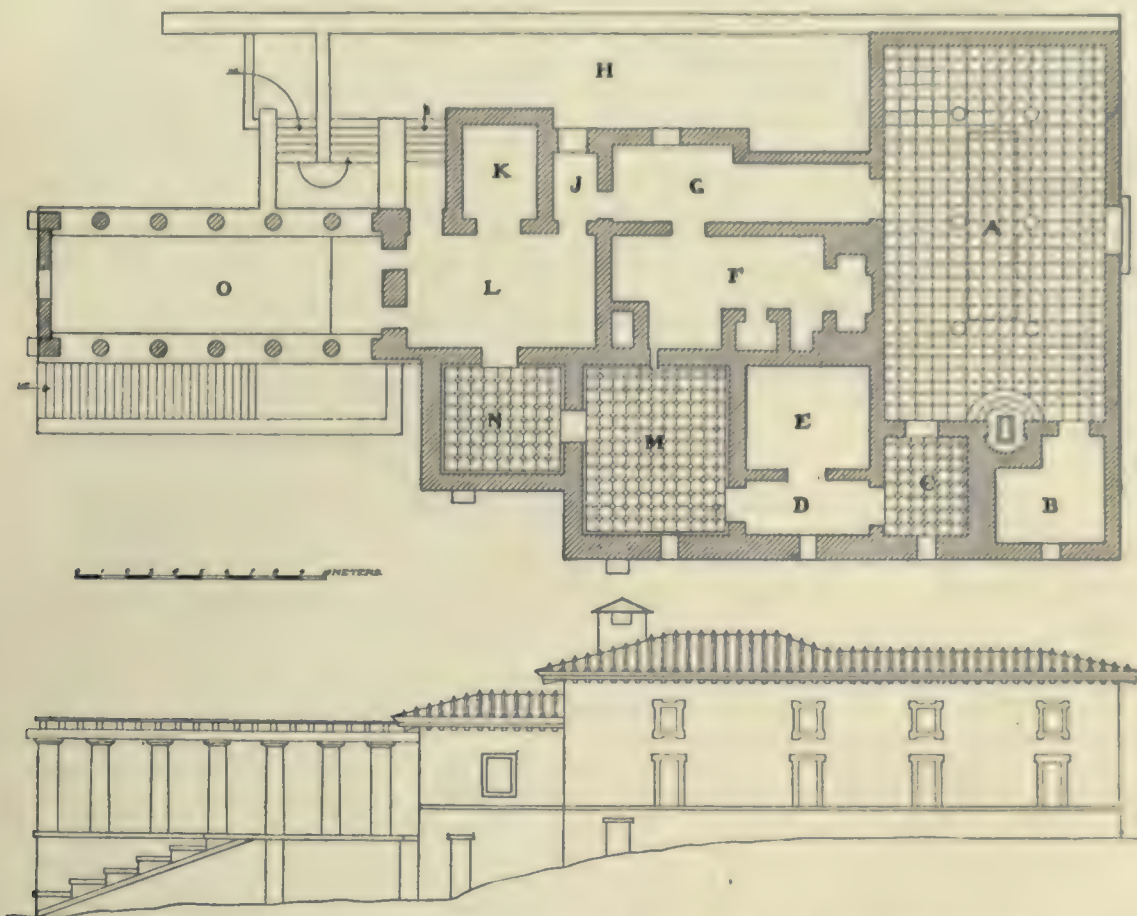


FIG. 69. — ARGIVE HERAEUM: ROMAN BUILDING (IX): PLAN AND ELEVATION RESTORED.

wall construction, through which warmed air circulated as in other Roman buildings, notably the baths at Pompeii. On PLATE XXIX., A and G, are shown the actual plan and a restored section. The floors were first covered with flat tiles about 0.60 m. square, upon which were built piers about 0.70 m. high of smaller square or round tile and in one case of stone. On these piers large tiles were laid, upon which was spread the concrete about 0.17 m. thick, and all was finished with a floor of mosaic or marble tile. The hollow walls were made by special flat tiles about 0.49 m. square by 0.02 m. thick, with projecting lugs, as is shown by a fragment, PLATE XXIX., A, and the section G.

A coat of plaster was first applied to the wall of the building to even the surface and to take the points of the tiles, which left an air space of about 0.06 m. The tiles were then covered and held in place by a coat of plaster 0.085 m. thick.<sup>1</sup>

Small passages or ducts through the walls were left between the rooms and under the floors to permit the warmed air to circulate throughout the various apartments.

<sup>1</sup> The Stabian Thermae at Pompeii have the floors and walls of the tepidarium constructed as above described, but the walls of the calidarium are made of tile pipe rectangular in section, measuring inside about 0.06

by 0.10 m. This pipe construction starts from the top of the hollow floor, and is carried up the walls around the vaulted ceiling and down to the floor again, thus permitting a complete circulation for the hot air.



The central room on the plan (PLATE XXVIII.) is where the fire was probably made, as it is supplied with what appears to be a smoke-flue, and there are vestiges of burnt matter.

Many of the rooms have floors of plaster, which is spread directly on the earth with rounded plaster-angles between floors and walls, indicating that the walls were also plastered. Some of these compartments may have been used as reservoirs and others as plunge-baths. The sketch-restoration (Fig. 69) is merely a suggestion and makes no claim to accuracy. In the plan I have assumed that the purpose of the various rooms may have been as follows : —

- |  |                                    |
|--|------------------------------------|
| A. Atrium.                                 | F. Kitchen and Furnace-room.       |
| B. Room for Attendant.                     | K. Sleeping chamber.               |
| C, M, and N, and possibly E. Warmed rooms. | L. Anteroom.                       |
| D, G, J. Passages.                         | O. Cisterns or tanks for swimming. |

#### LOWER STOA.

South of the Roman Building are the remains of an L-shaped building (X), one leg measuring over all 74.33 m. and the other about 52 m. in length. At the extreme southern end a retaining wall was built which was continued beyond the line of the building, and it may have been the original intention to carry the building around one or both of the two open sides. It may have formed a court for herding cattle before the sacrifice.

The remains are insufficient to justify an attempt at restoration. The outer walls are too narrow for column foundations, and indicate that the building was inclosed with a central row of columns to support the roof. See the plan of site restored, PLATE V.

#### CISTERNS.

Several cisterns or baths are shown on the general plan, PLATE IV. : A, west of the Old Temple ; B, C, D, in the Upper Stoa (II) ; E, Ea, east of the Lower Stoa. This last is underground and cross-shaped. F, a small bath south of E ; in this chamber a strigil was found. There were several drains. The one dotted on the plan between the Upper Stoa and the Temple was constructed of tile pipe, a detail of which is given on PLATE XXIX., Y. The underground aqueducts south of the site have been referred to by Dr. Waldstein (above, p. 16).

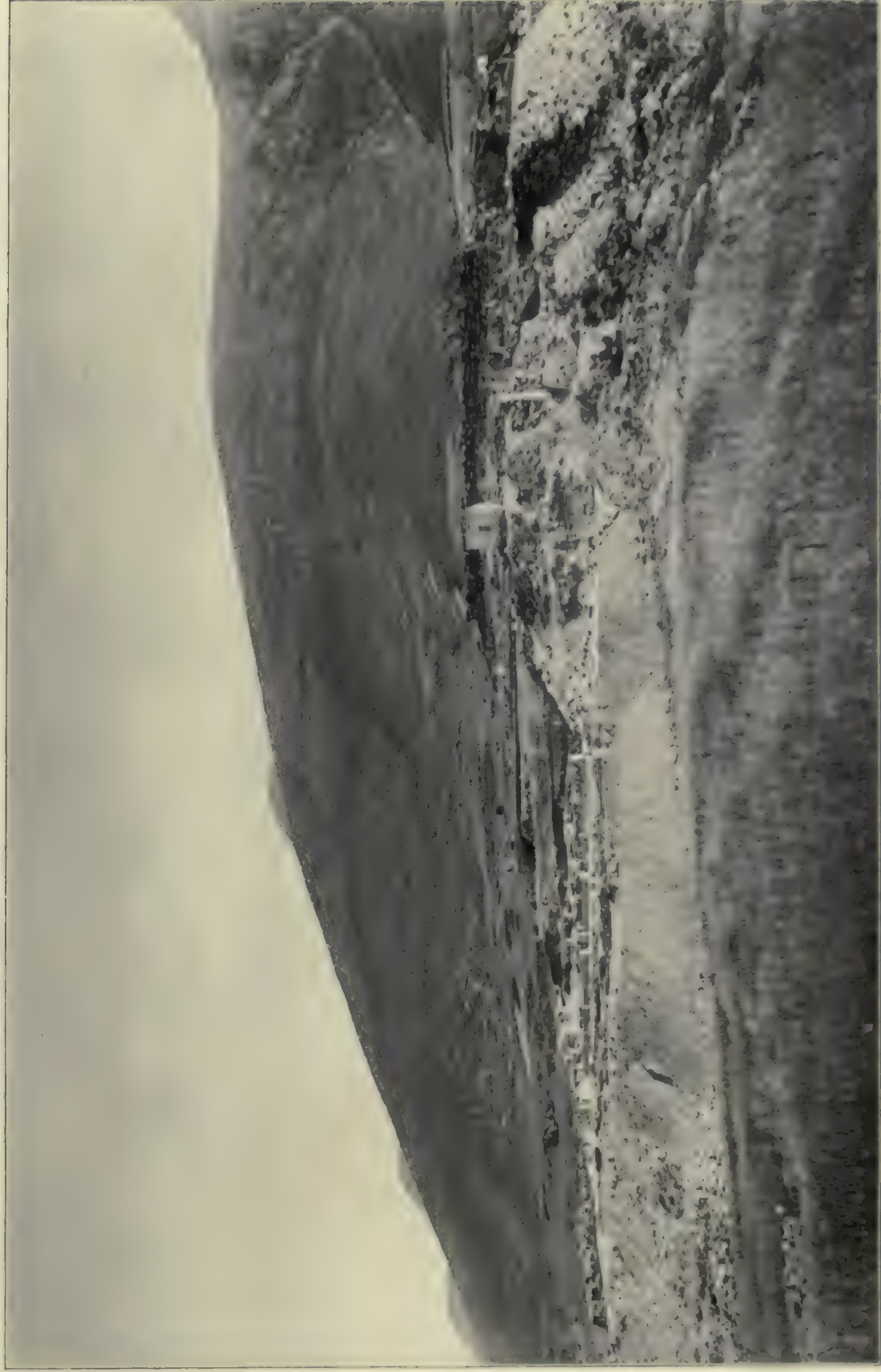


ARGIVE HERAEUM. — VIEW OF THE SECOND TEMPLE (N), LOOKING SOUTH FROM THE CYCLOPEAN WALL.

The Gulf of Argos is on the horizon. The town of Argos is at the foot of the hill (Larisa) in the right distance. The village of Paia is visible on a line this side of Argos, while the villages of Chonice and Anyphi are respectively at the left and toward the centre of the picture. The two meandering roads lead down from the Heraeum to the main highway, which, just visible, cuts the picture almost horizontally. This main road comes, on the right, from Mycenae, and goes thence easterly to Chonice, where it branches to Argos, Midea, Tiryns, and Nauplia.



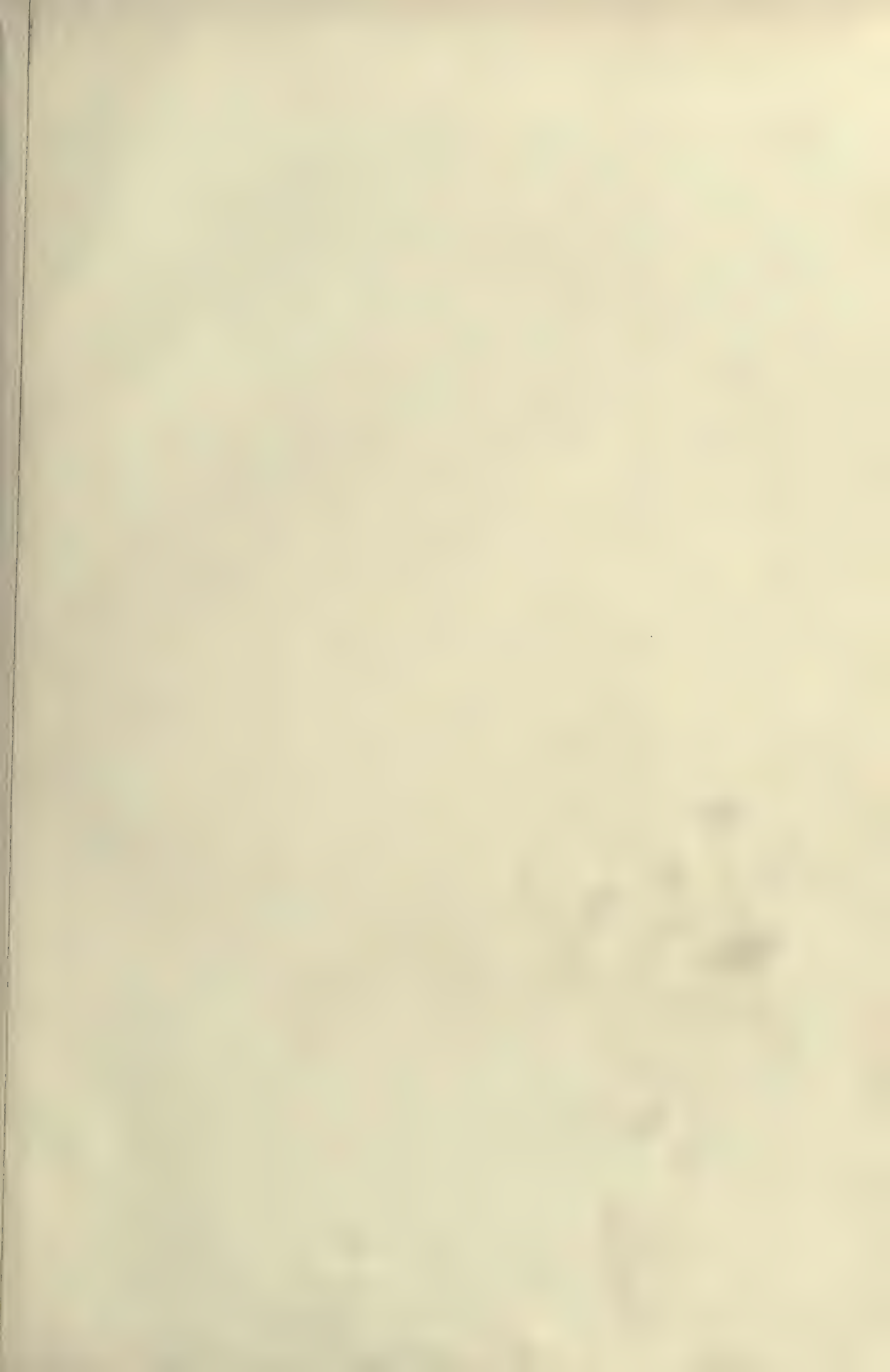




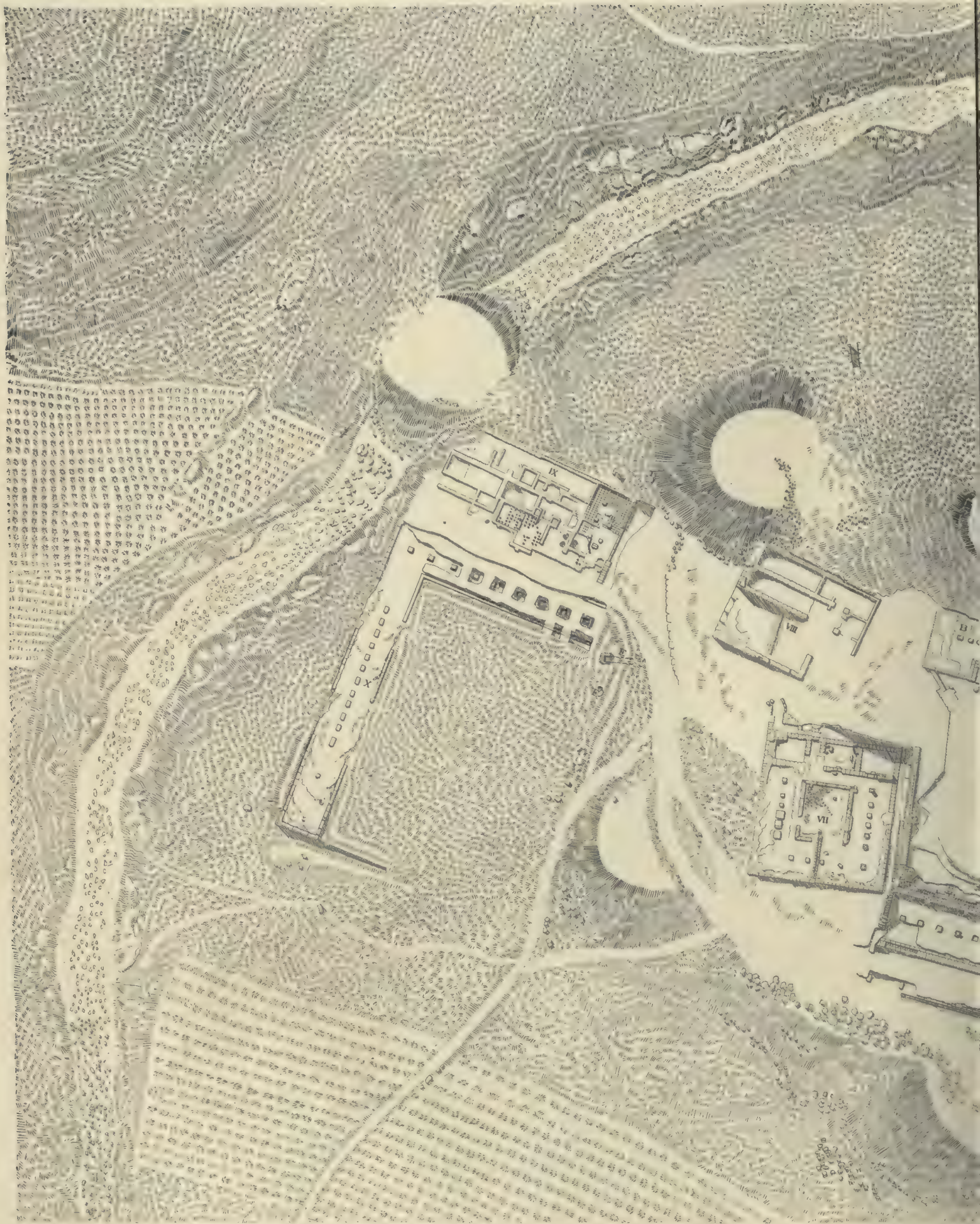
ARGIVE HERAEUM. — VIEW OF THE SITE FROM THE SOUTH











ARGIVE HERAEUM. — GENERAL PLAN OF THE

*Drawn and surveyed by*

I. Old Temple  
II. North Stoa

III. Northeast Stoa  
IV. East Building

V. Second Temple  
VI. South Stoa  
XI. Plylakeion  
A.





SITE: ACTUAL STATE AFTER EXCAVATION

Edward L. Tilton, Architect

IX. Roman Building  
X. Lower Stoa  
XI. West Building  
XII. Northwest Building  
XIII. Cisterns and Baths



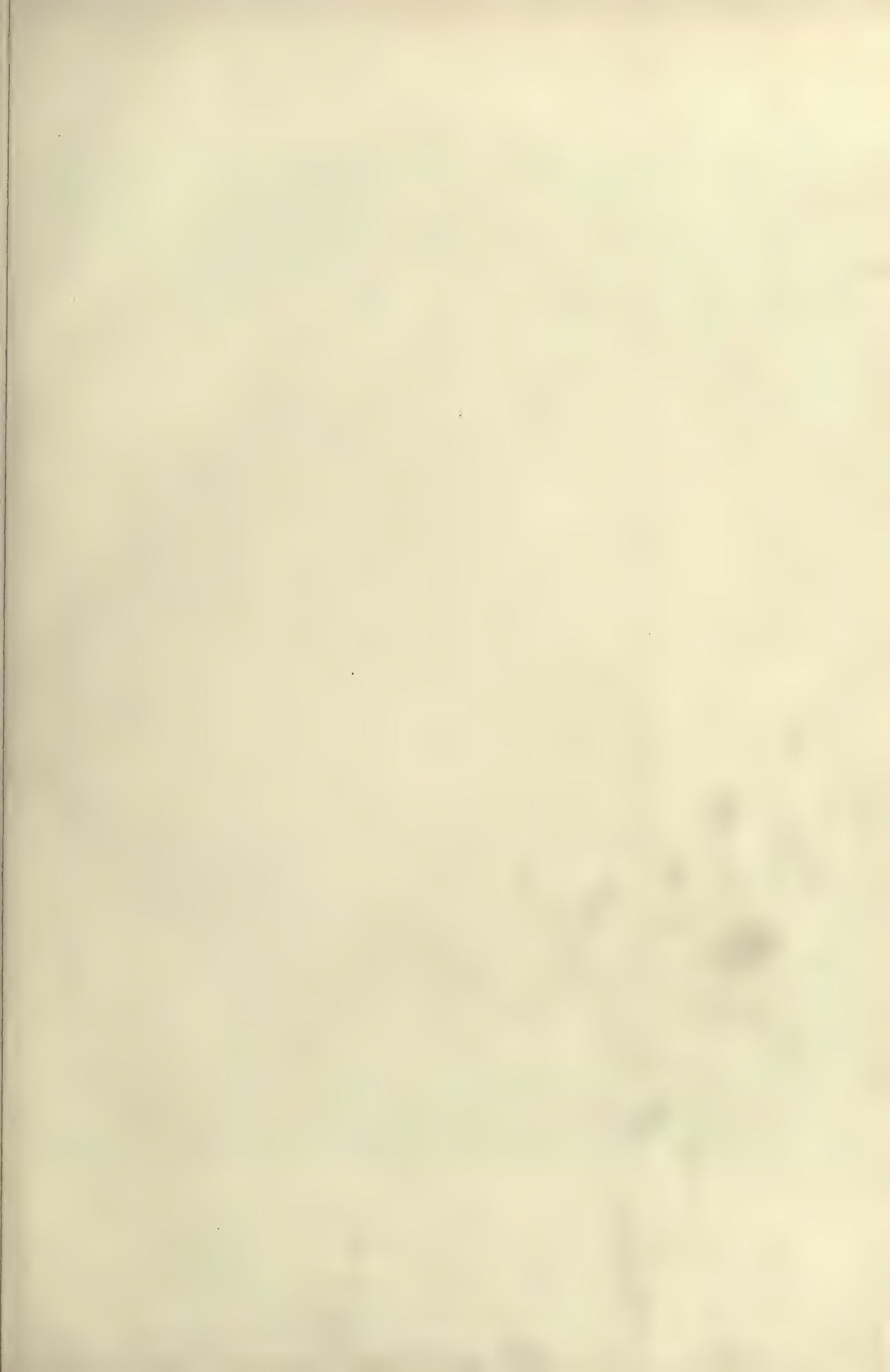




ARGIVE HERAEUM. — GENERAL PLAN OF THE SITE: RESTORED









THE ARGIVE HERAEUM



ARGIVE HERAEUM. — REST

*By Edward L.*



ATION IN PERSPECTIVE

, Architect







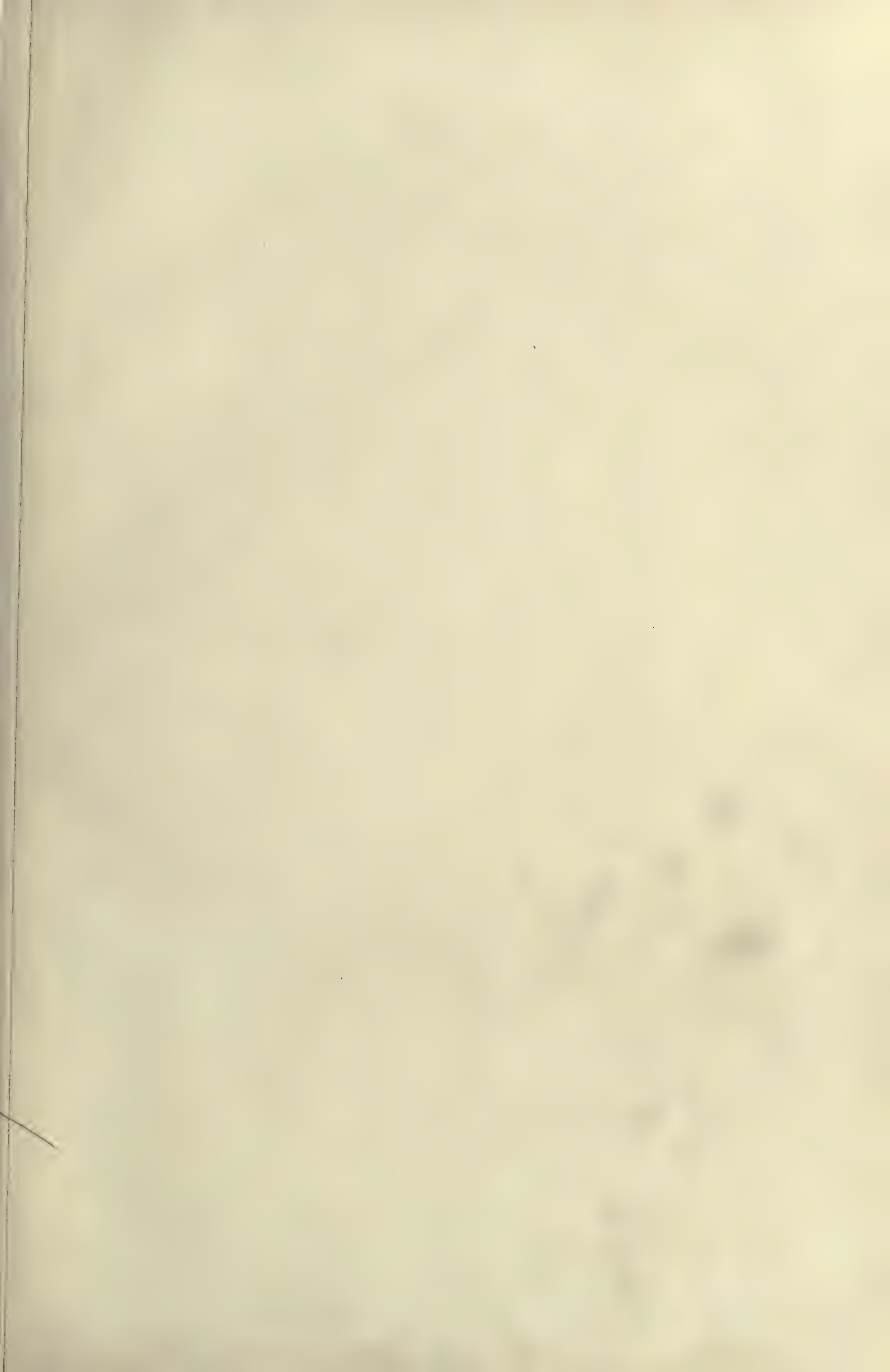
ARGIVE HERAEUM. — VIEW LOOKING NORTHEAST UPON THE FLIGHT OF STEPS

The South Stoa (VI) and the Second Temple are above, beyond which the Cyclopean wall of the Old Temple terrace is visible, and Mount Euboea above all. The *Phigakion* is on the right.

NOTE. — Part of the old *peribolus*-wall is visible at the left, just above the rear wall of the South Stoa; here were found the Mycenaean graves. At the right of the picture, and half way up the slope, is seen a portion of the steps which prove the flight had been continued to the terrace of the temple.

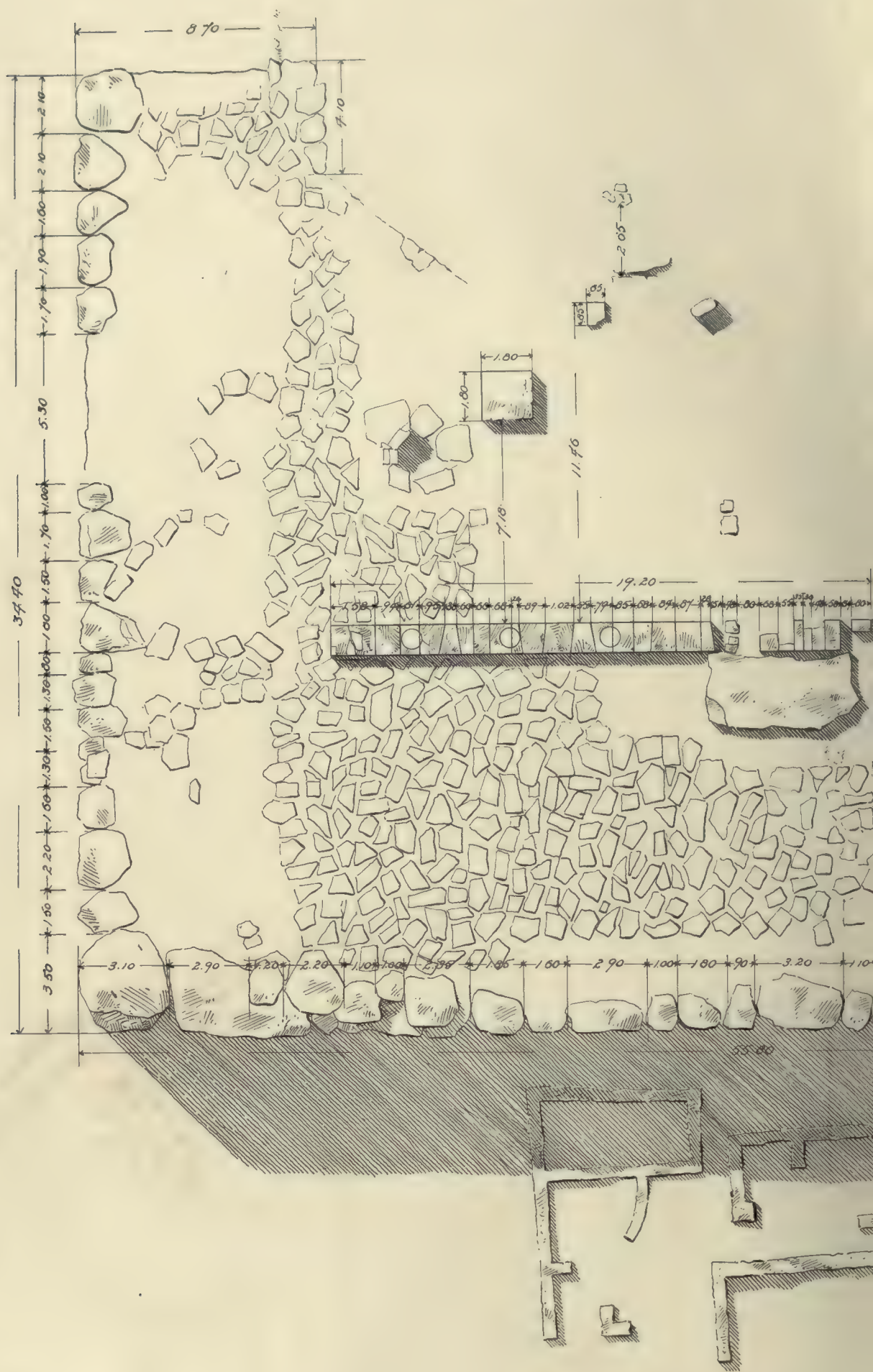






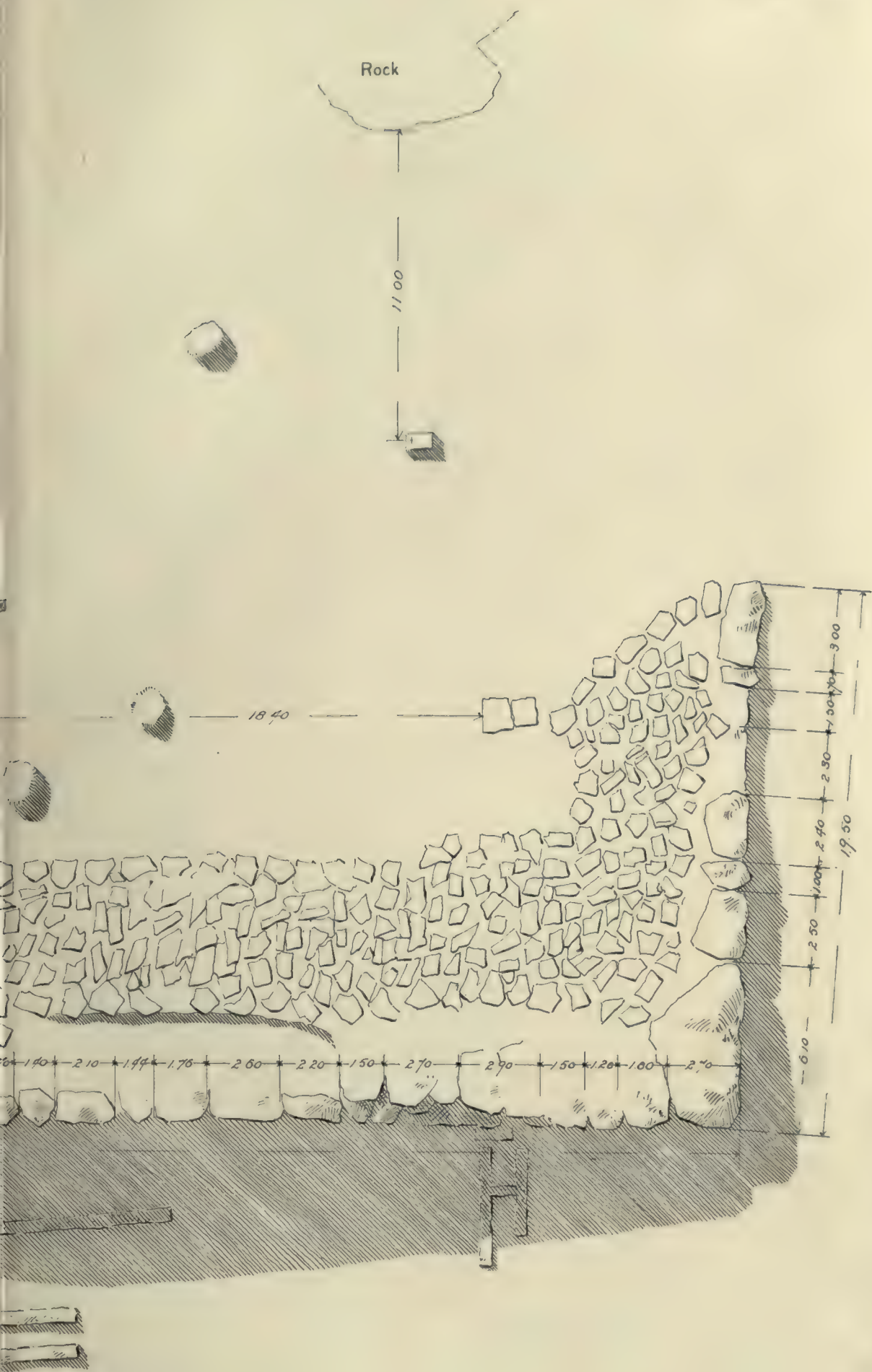


# THE ARGIVE HERAEUM



ARGIVE HERAEUM. — OLD TEMPLE

Measured by

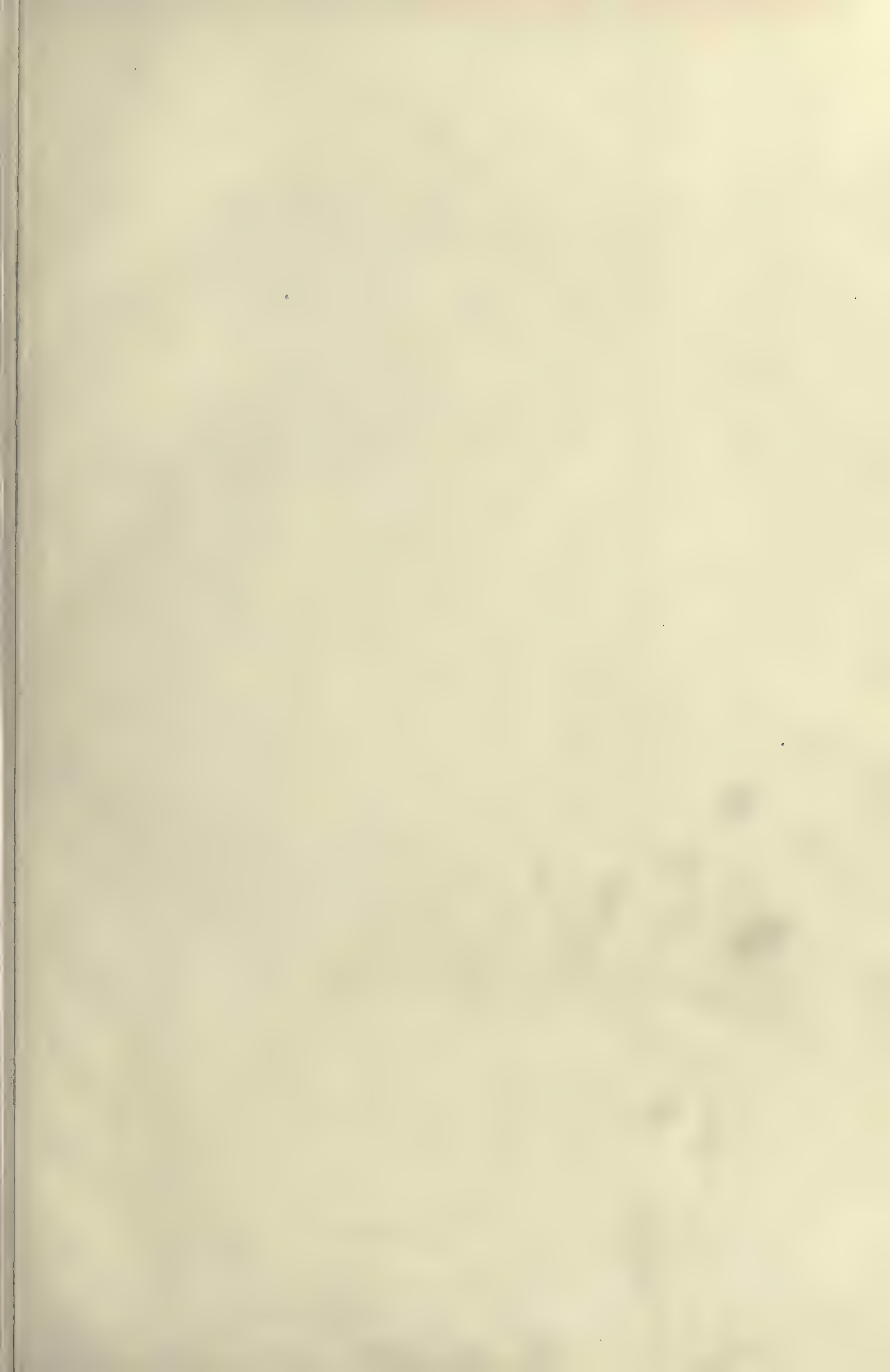


E PLATFORM: ACTUAL STATE

ard L. Tilton









THE ARGIVE HERAEUM



ARGIVE HERAEUM. — THE OLD TEMPLE AND STO

*Measured and Restored*



I. AND III.: ACTUAL STATE AND RESTORATION

*Edward L. Tilton*







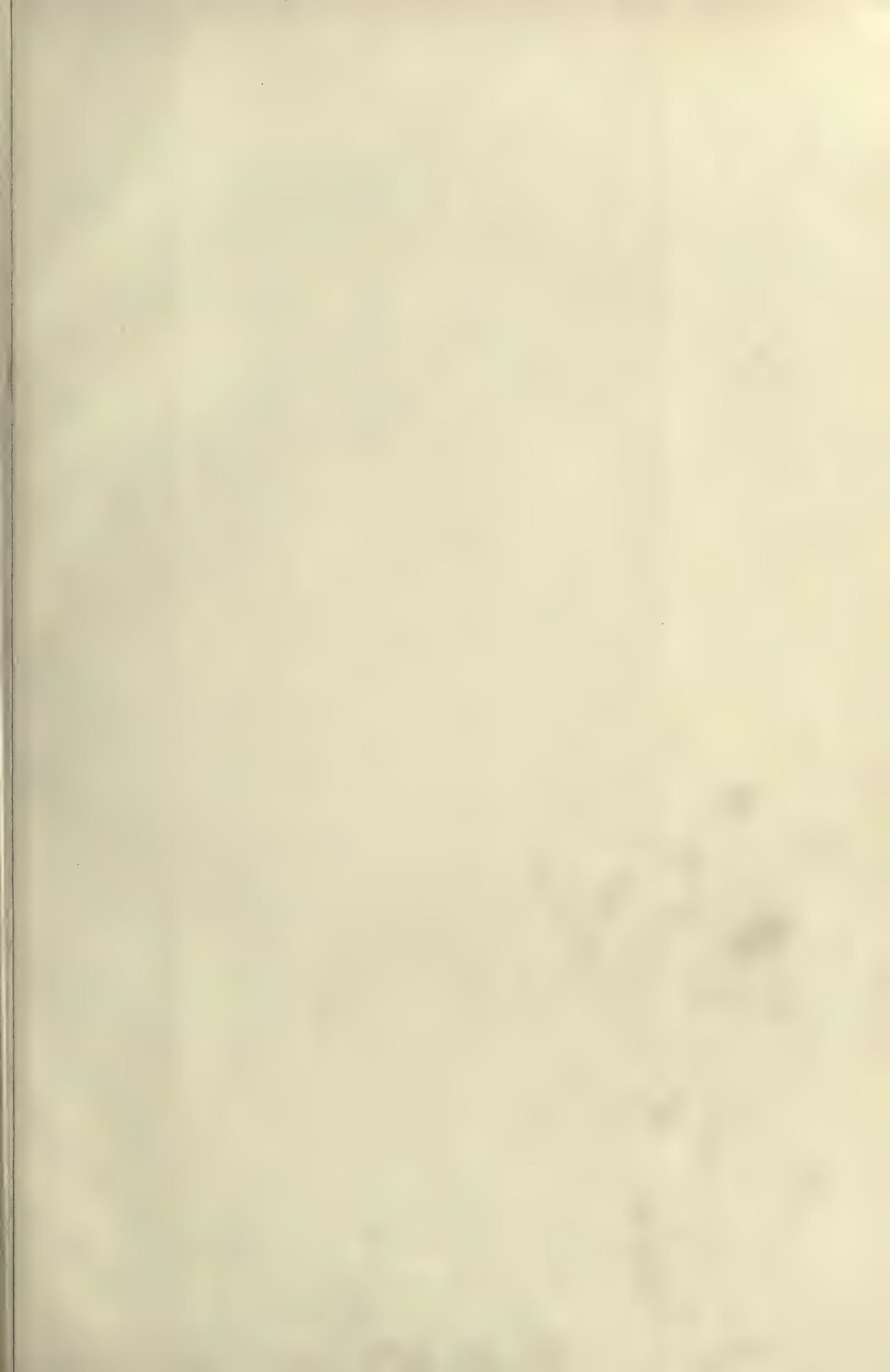
ARGIVE HERAEUM. — VIEW LOOKING SOUTHWEST UPON THE REMAINS OF THE OLD TEMPLE AND ITS PLATFORM

The town of Argos is at the base of the hill (Larisa) in the left distance.

NOTE. — The flatness of the plain is made apparent, with its tilled fields and the villages dotted over it.









THE ARGIVE HERAEUM



ARGIVE HERAEUM.—SECTION THROUGH SITE FROM  
RESTORED

*Measured and Restored*



NORTH TO SOUTH: ACTUAL STATE BELOW AND  
RECONSTRUCTION ABOVE

by Edward L. Tilton





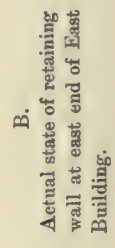
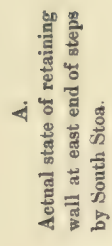












PLAN.

10257-1224

The drawing consists of two parts: a plan view at the top and an elevation view below it. The plan view shows a long, narrow wall with a grid of blocks. Dimensions are given along the top and bottom edges. The top edge has a total length of 218' and a width of 2' 10". The bottom edge has a total length of 39' 65" and a width of 2' 10". The elevation view shows the wall's profile, with a total height of 39' 65". The wall is composed of large blocks, with a smaller section on the right side. The drawing is labeled "PLAN." and "ELEVATION.".

COMPTON

ARGIVE HERAEUM. — PLANS AND ELEVATIONS OF VARIOUS WALLS







ARGIVE HERAEUM.—VIEW LOOKING SOUTHWEST UPON THE SECOND TEMPLE (V) FROM THE CYCLOPEAN WALL.  
The foreground shows statue-bases and cuts for stelae. The railway from Nauplia and Argos to Corinth skirts the base of the hills in the distance.







ARGIVE HERAEUM. — VIEW LOOKING SOUTHEAST UPON THE WEST BUILDING (VII)

The wall to the left is the western retaining wall of the temple terrace. On the horizon to the right is the Gulf of Argos, eight miles distant; and the long low hill rising from the gulf is Palanidi Hill, at the base of which is Nauplia. Tiryns is further to the left, but not apparent in the view. The village of Chonicea is visible at about the middle of the plain.













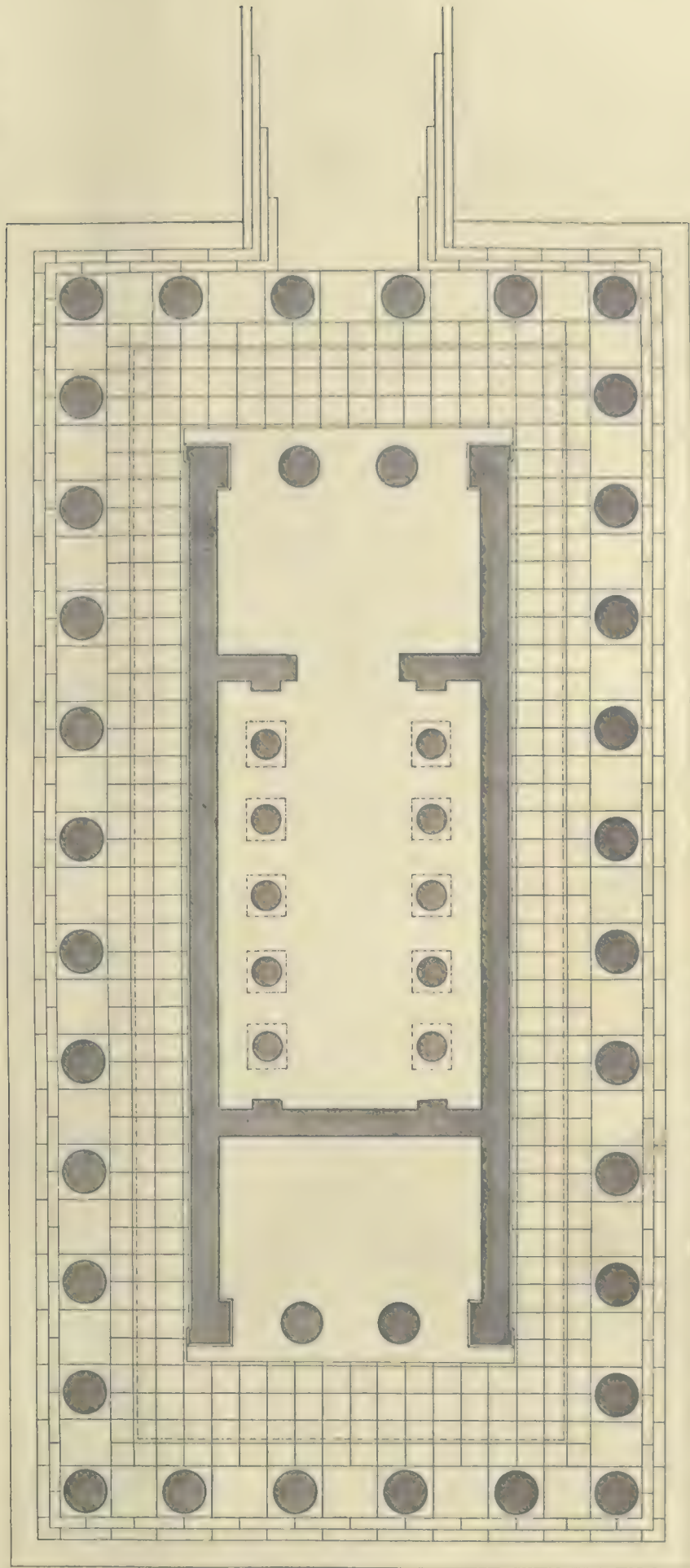


TEMPLE: ACTUAL STATE

rd L. Tilton







ARGIVE HERAEUM.—PLAN OF THE SECOND TEMPLE: RESTORATION

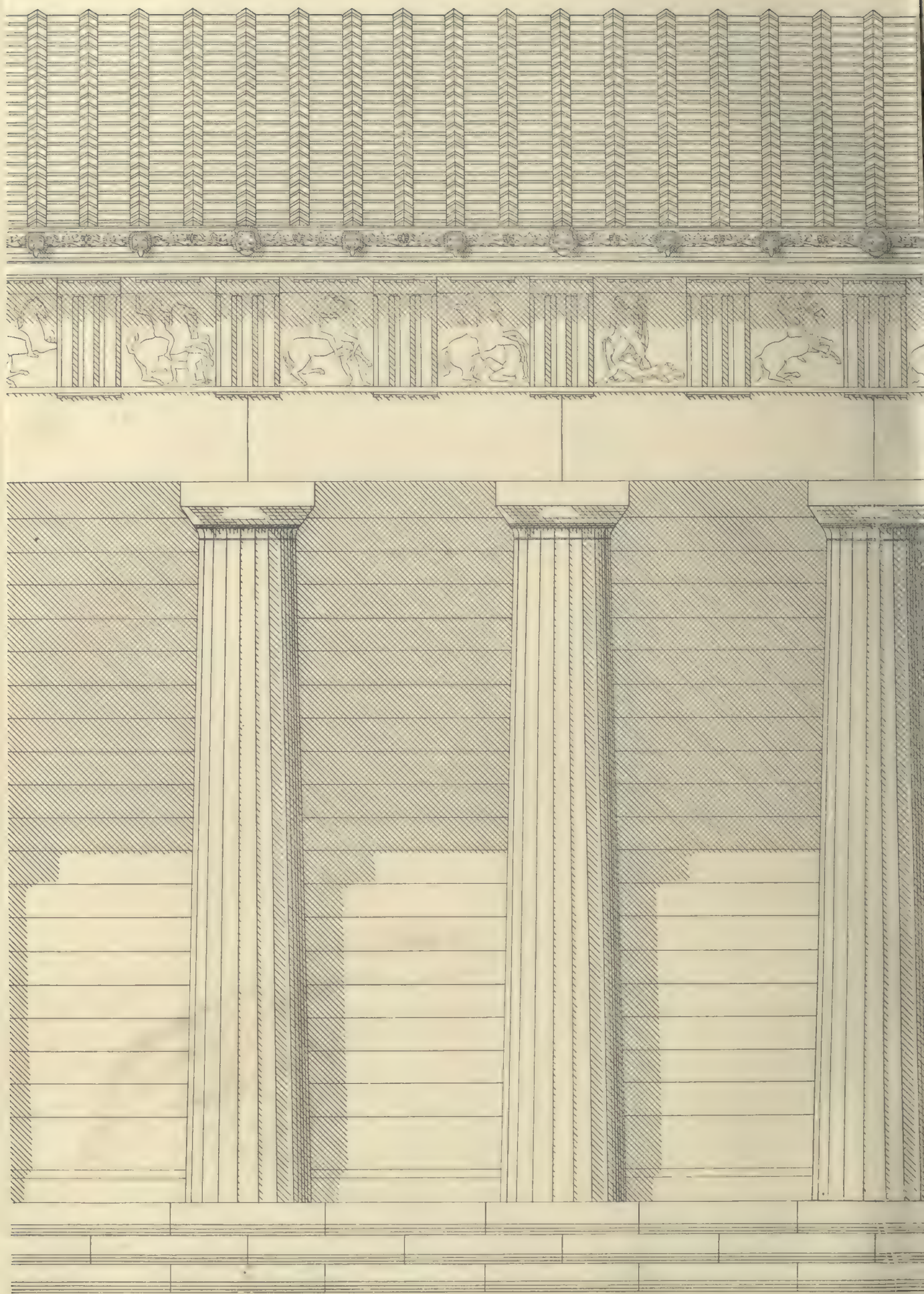
*Restored by Edward L. Tilton*











# ARGIVE HERAEUM. — SIDE ELEVATION

NOTES. — The roof-tiles, metopes, and cyma-moulding are of white marble. The columns and base are of limestone. The carvings sketched in the metopes are purely imaginary. The cyma-moulding is very imperfectly reproduced.





OF THE SECOND TEMPLE: R  
cornice, epistyle, and columns are of pol  
y. Owing to the great reduction of the

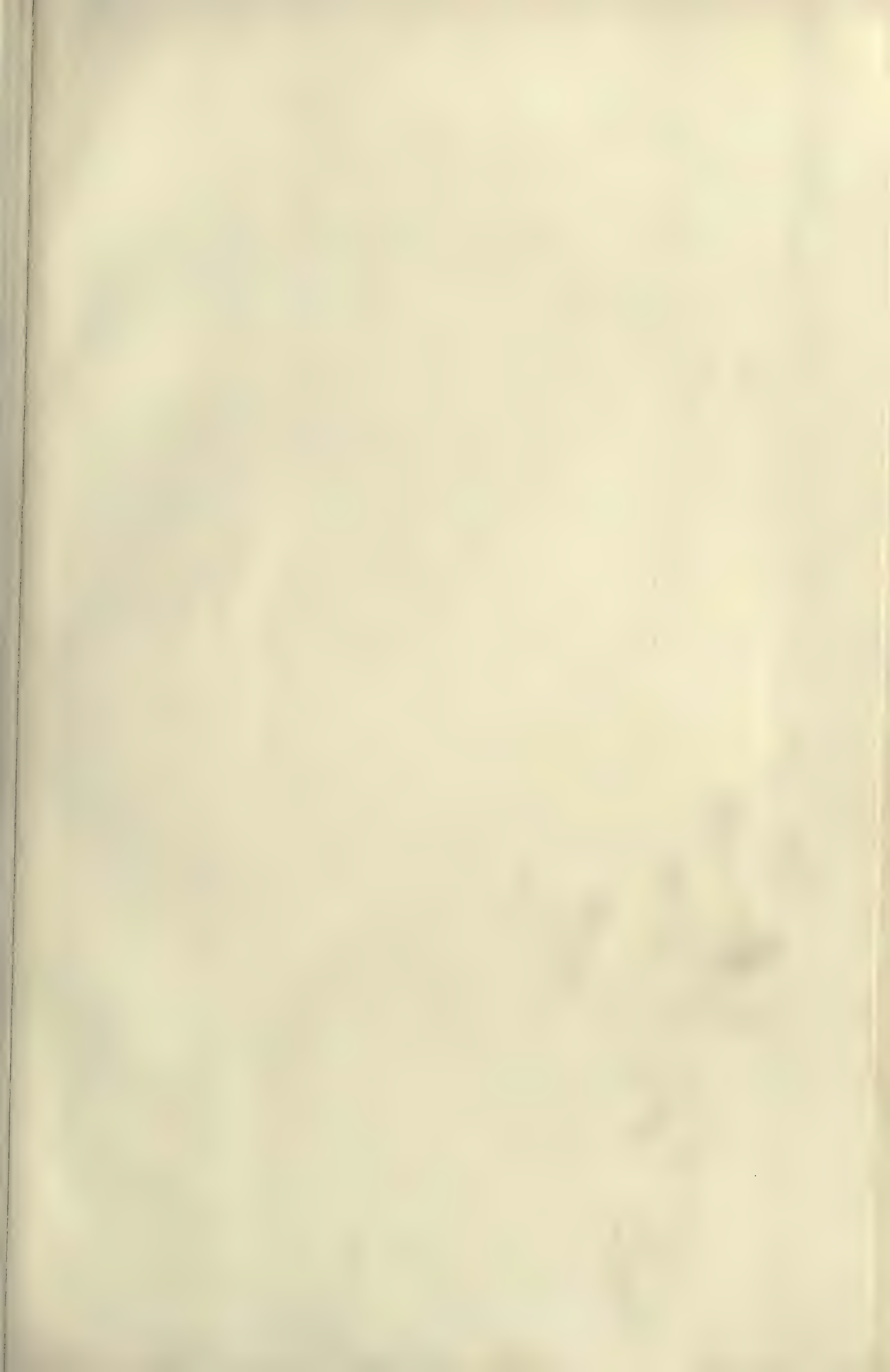




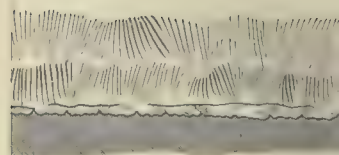






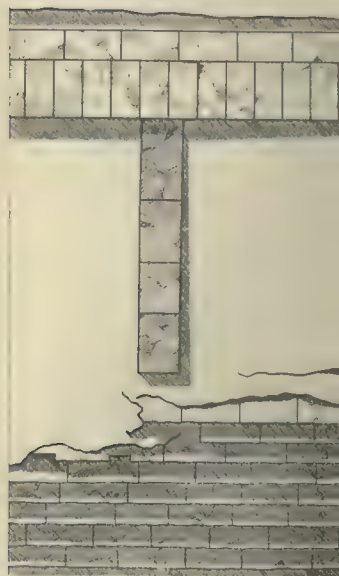






92 5.5

3.5 7.04 3.5



STATE OF SOUTH S

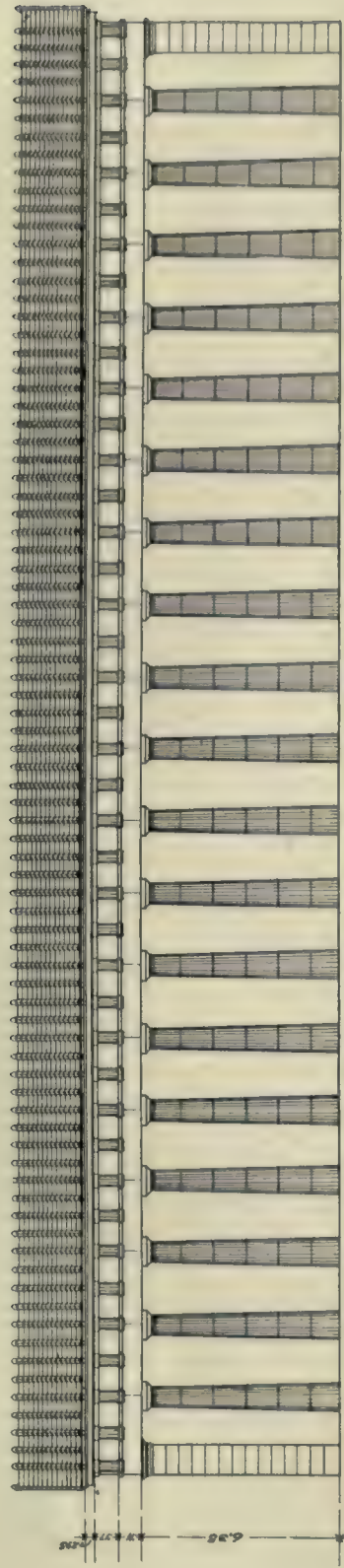
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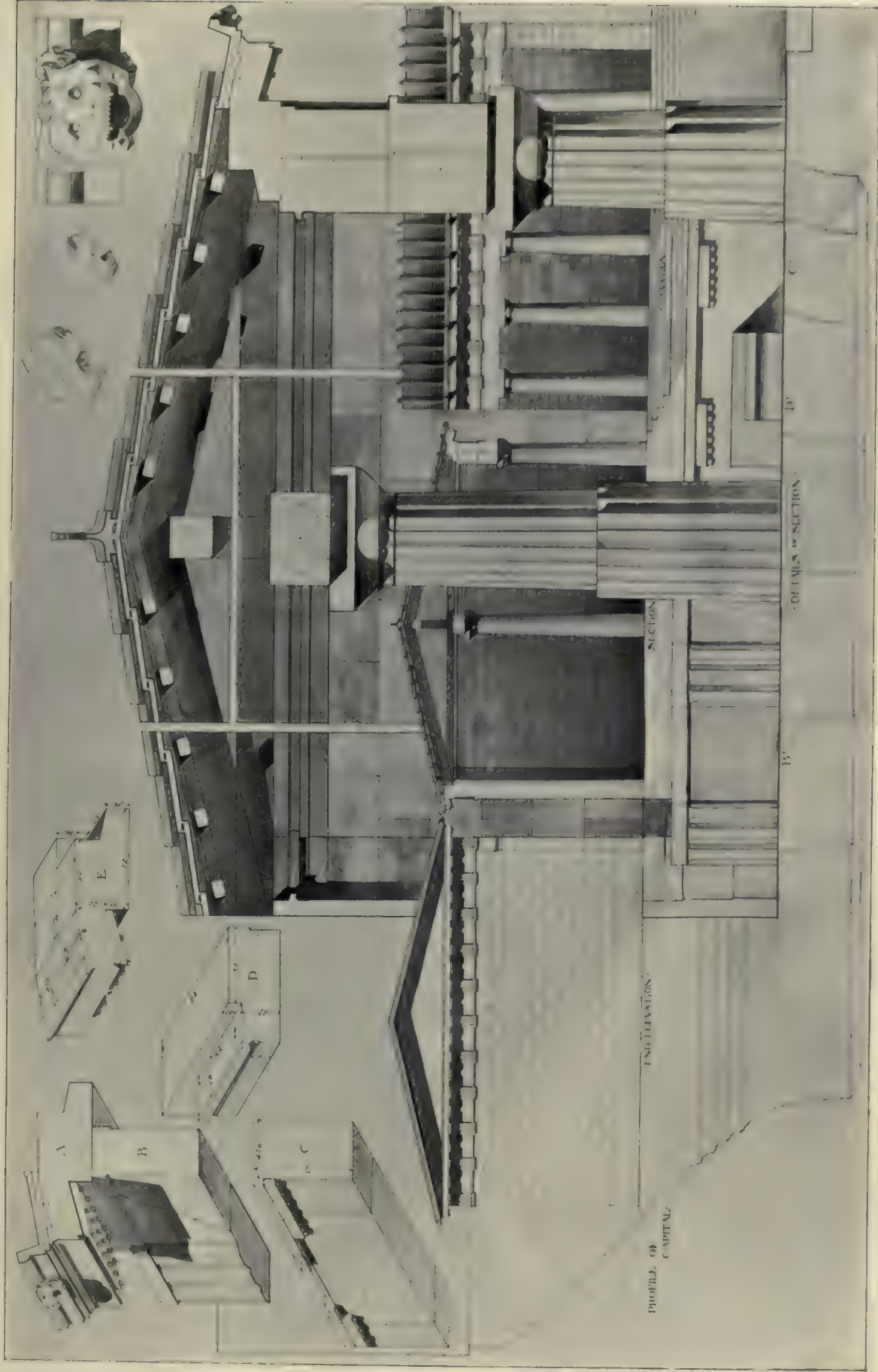




ARGIVE HERAEUM. — SOUTH STOA: PLAN AND ELEVATION RESTORED







ARGIVE HERAEUM. — DETAILS OF THE SOUTH STOA (RESTORED)

Elevation of end, and a portion of front elevation; transverse section, and the same enlarged; profile of capital. — Entablature stones in isometric perspective: — A. *Geison* or cornice. B. Frieze. C. Epistyle. D'. The same in elevation. E. An upper view of A. — In the upper right-hand corner is the terra-cotta lion's head, restored, with two views of the fragment (side and front).

Measured and Restored by E. L. Tilton.



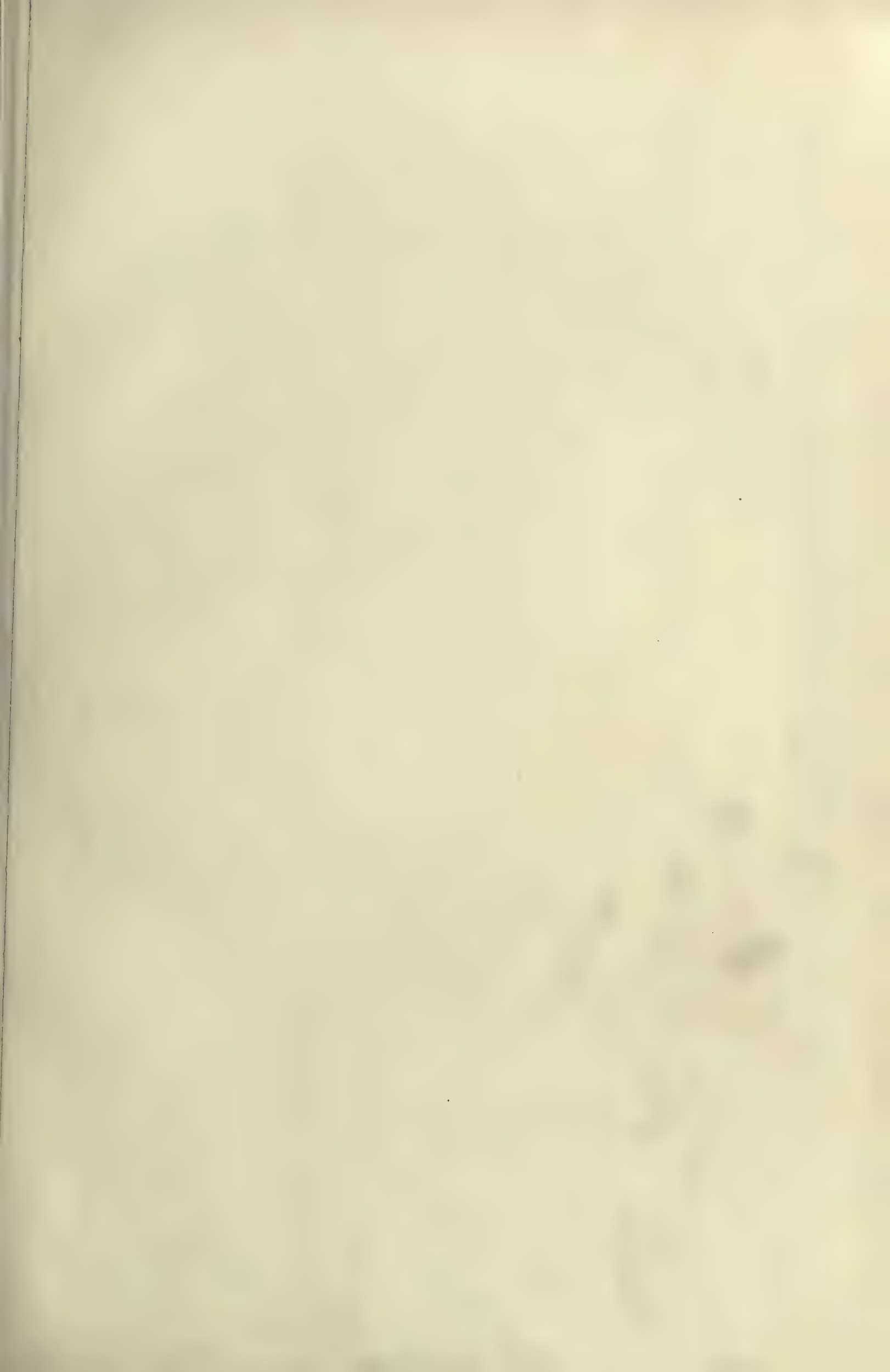




ARGIVE HERAEUM. — PAINTED TERRA-COTTA ARCHITECTURAL FRAGMENTS









Architectural drawing of the Temple of Isis at Philae, showing the plan of the temple complex. The drawing includes a scale bar at the bottom left, indicating measurements in meters and Greek units. The plan shows the temple's layout, including the main hall, smaller rooms, and a large courtyard. The drawing is oriented with the temple entrance at the top.

Measured by



ING (VII): ACTUAL STATE

L. Tilton



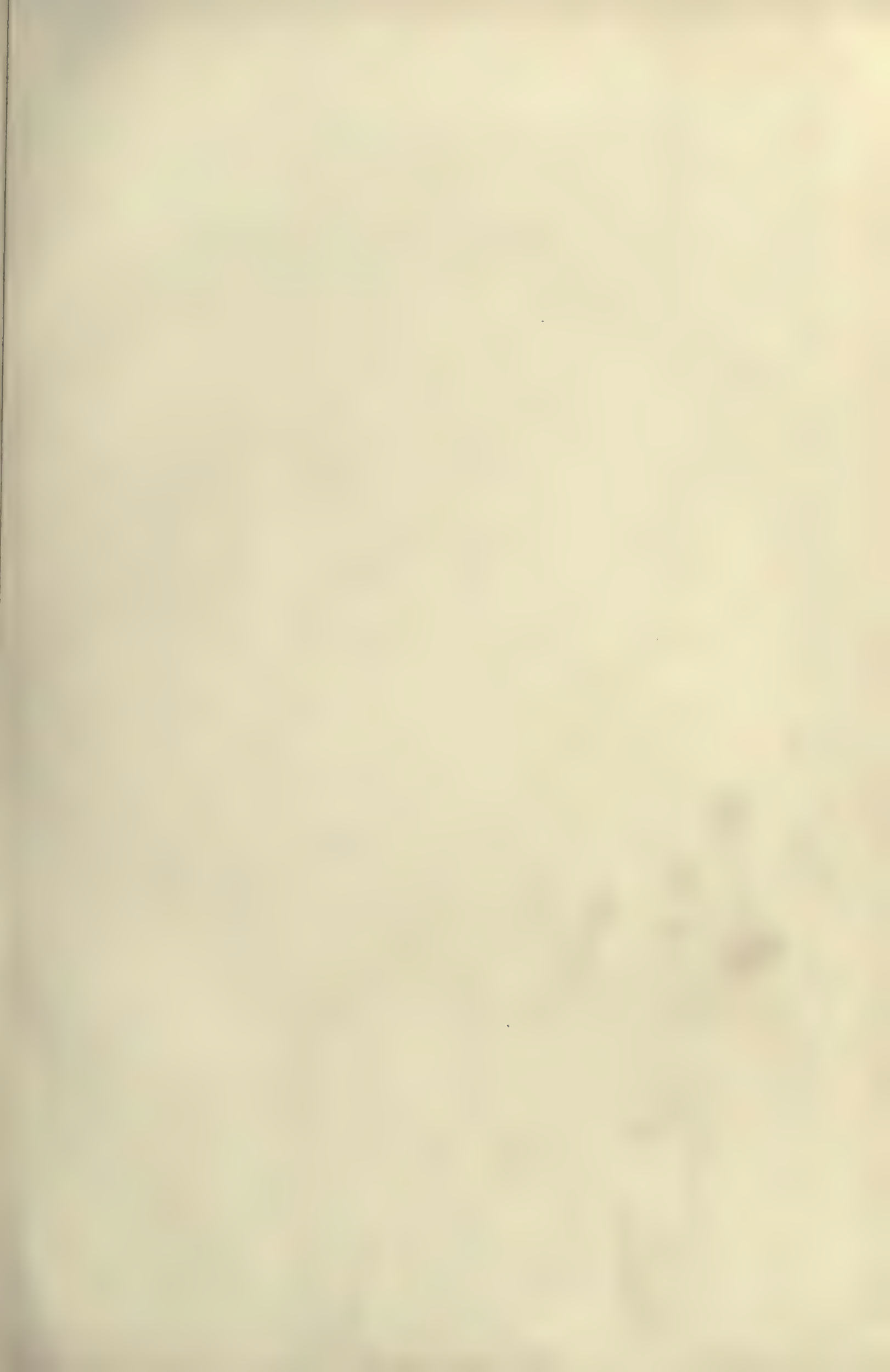




ARGIVE HERAEUM — VIEW LOOKING SOUTHWEST UPON THE WEST BUILDING (VII)  
Note the limestone door-sill near the centre foreground ; the column-drum with sixteen channels, and the small capital, lying inverted beyond it, with fourteen channels.

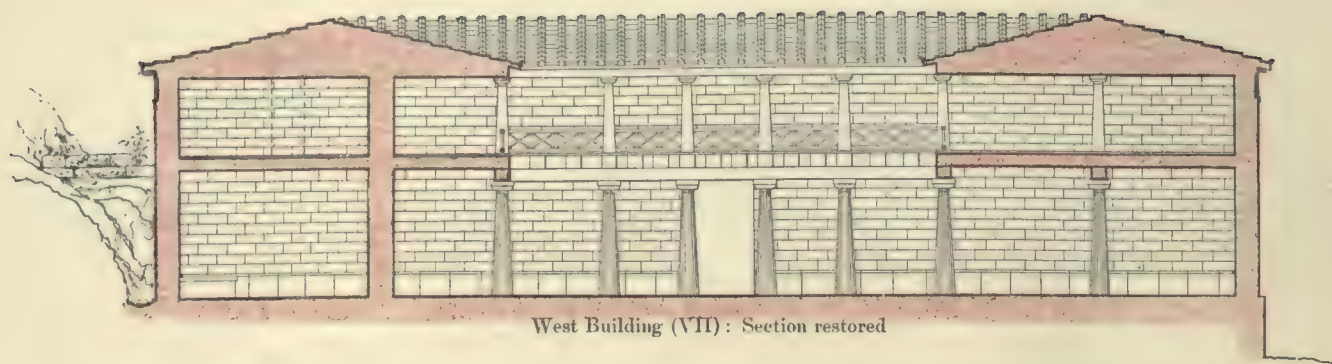




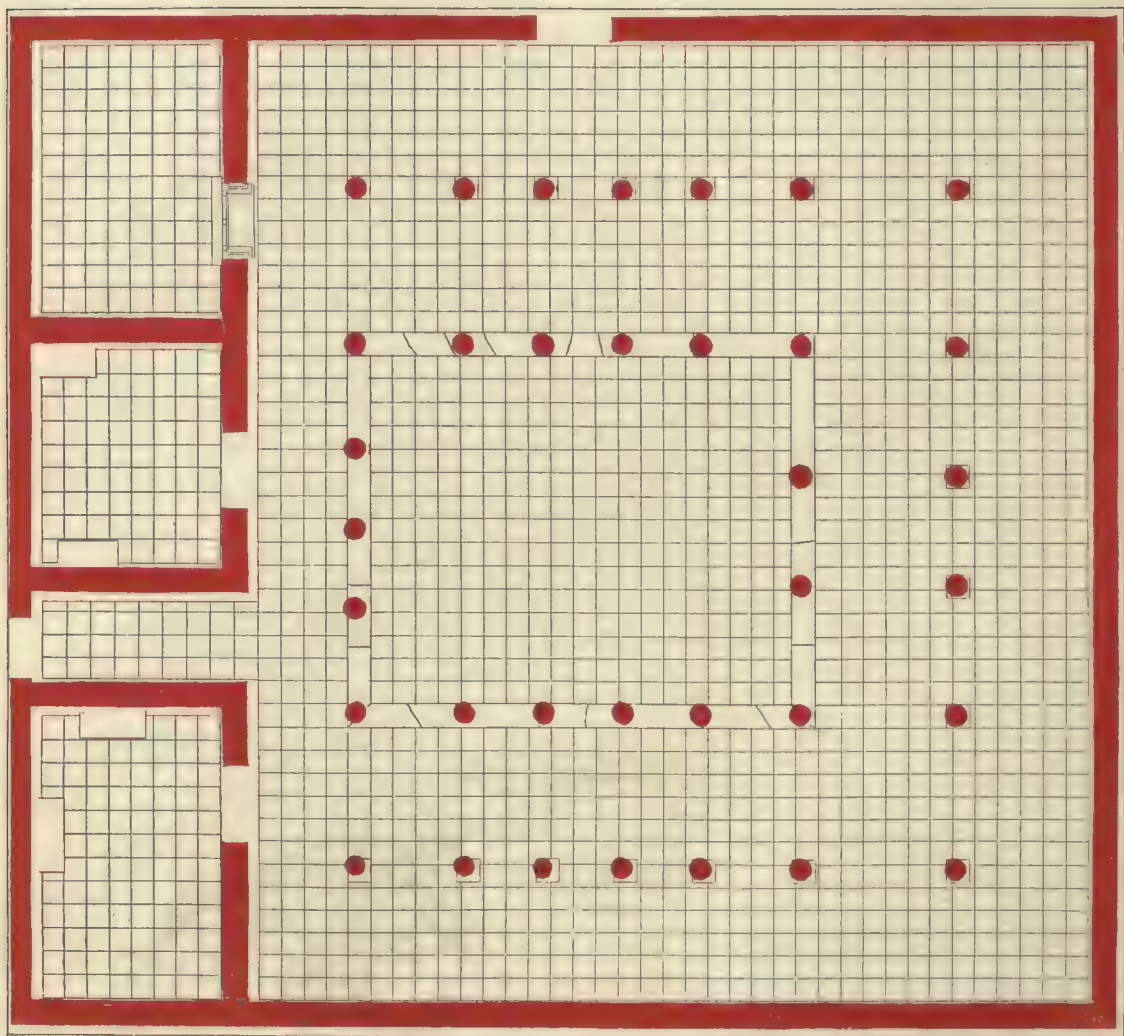




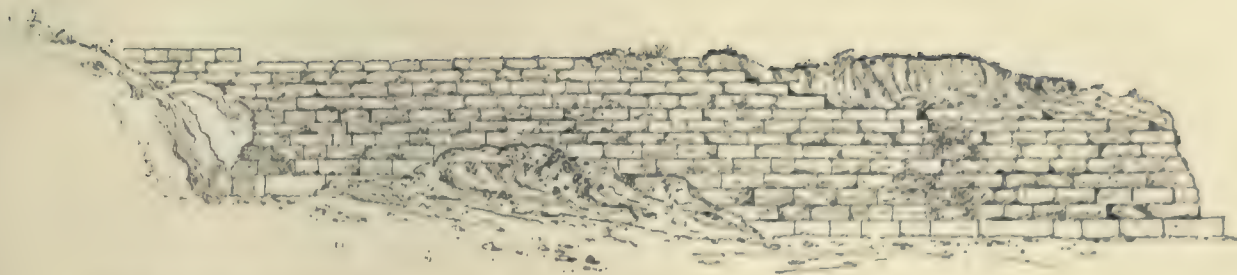
THE ARGIVE HERAEUM



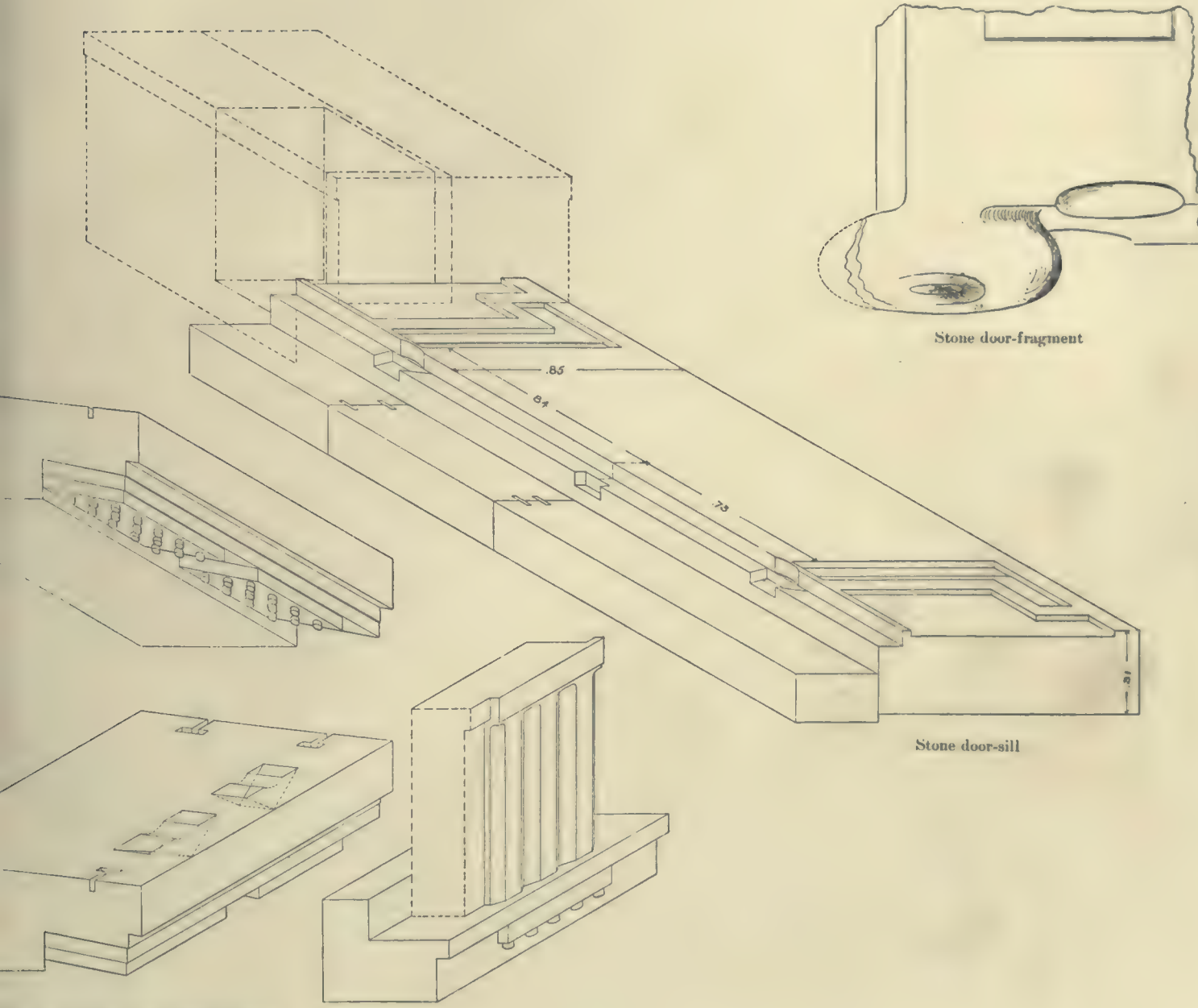
West Building (VII) : Section restored



West Building (VII) : Plan restored



Actual state of wall retaining the west side of the Terrace of the Second Temple, and adjacent to the West Building



Stone door-fragment

Stone door-sill

Cornice, triglyph, and epistyle blocks









This architectural drawing shows a cross-section of a stone wall. The wall is composed of several layers of stones, with a central core of lighter-colored material. The drawing includes several dimension lines and numerical values:

- At the top, a dimension line indicates a width of 16.75.
- On the left side, a vertical dimension line indicates a total height of 24.00.
- Along the left edge, several smaller vertical dimensions are marked: 3.00, 1.50, 1.50, 4.10, 3.10, 3.70, 2.30, and 3.20.
- Inside the wall, a horizontal dimension line indicates a width of 2.40.
- At the bottom, a horizontal dimension line indicates a width of 7.55.

The drawing uses hatching to represent different materials and textures, such as the rough surface of the outer stones and the smoother core.

ARGIVE HERAEUM. — NORTHWE



BUILDING (VIII): ACTUAL STATE





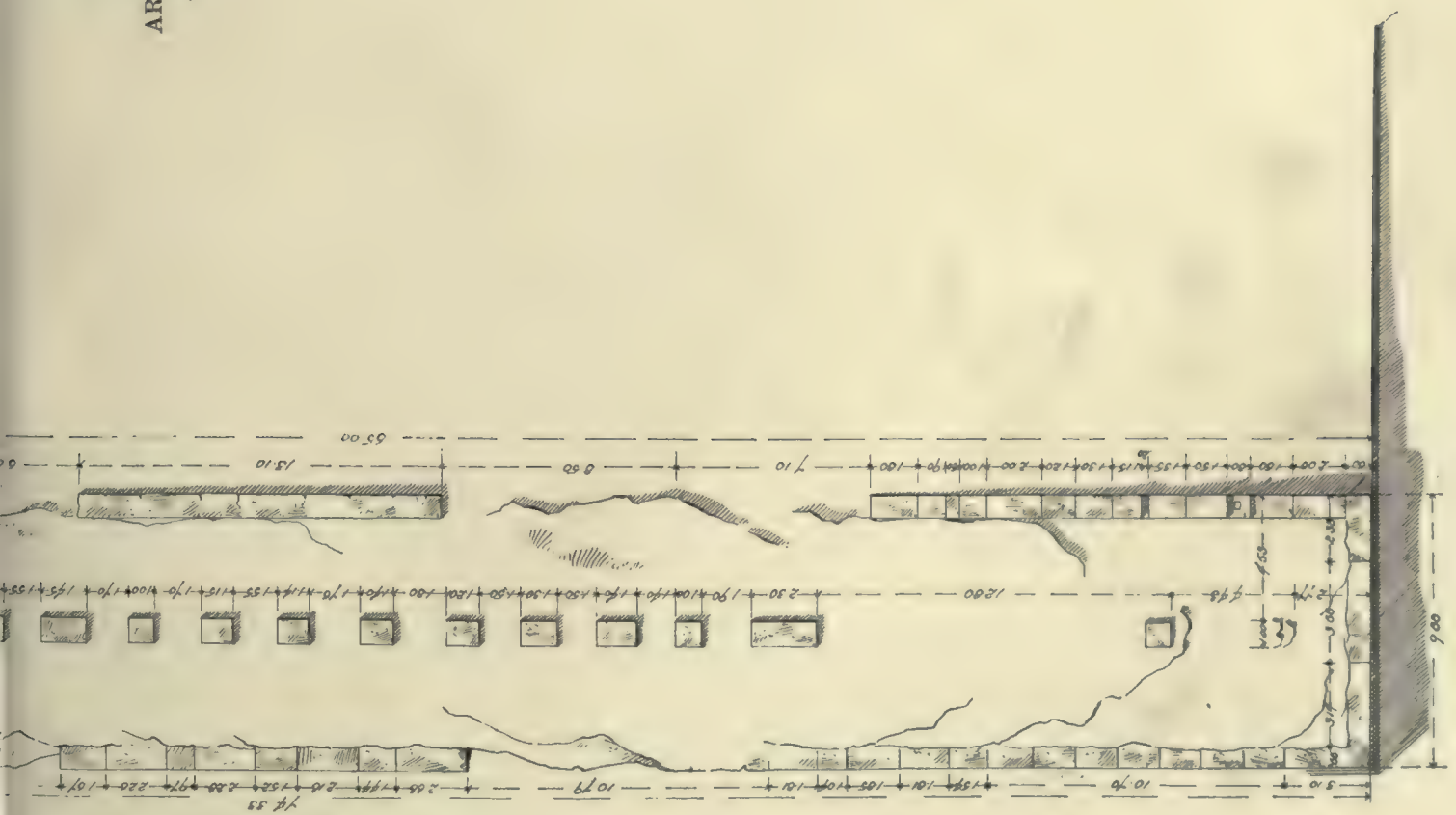






ARGIVE HERAEUM. — ROMAN BUILDING (IX)  
AND LOWER STOA (X): ACTUAL STATE

*Measured by Edward L. Tilton*



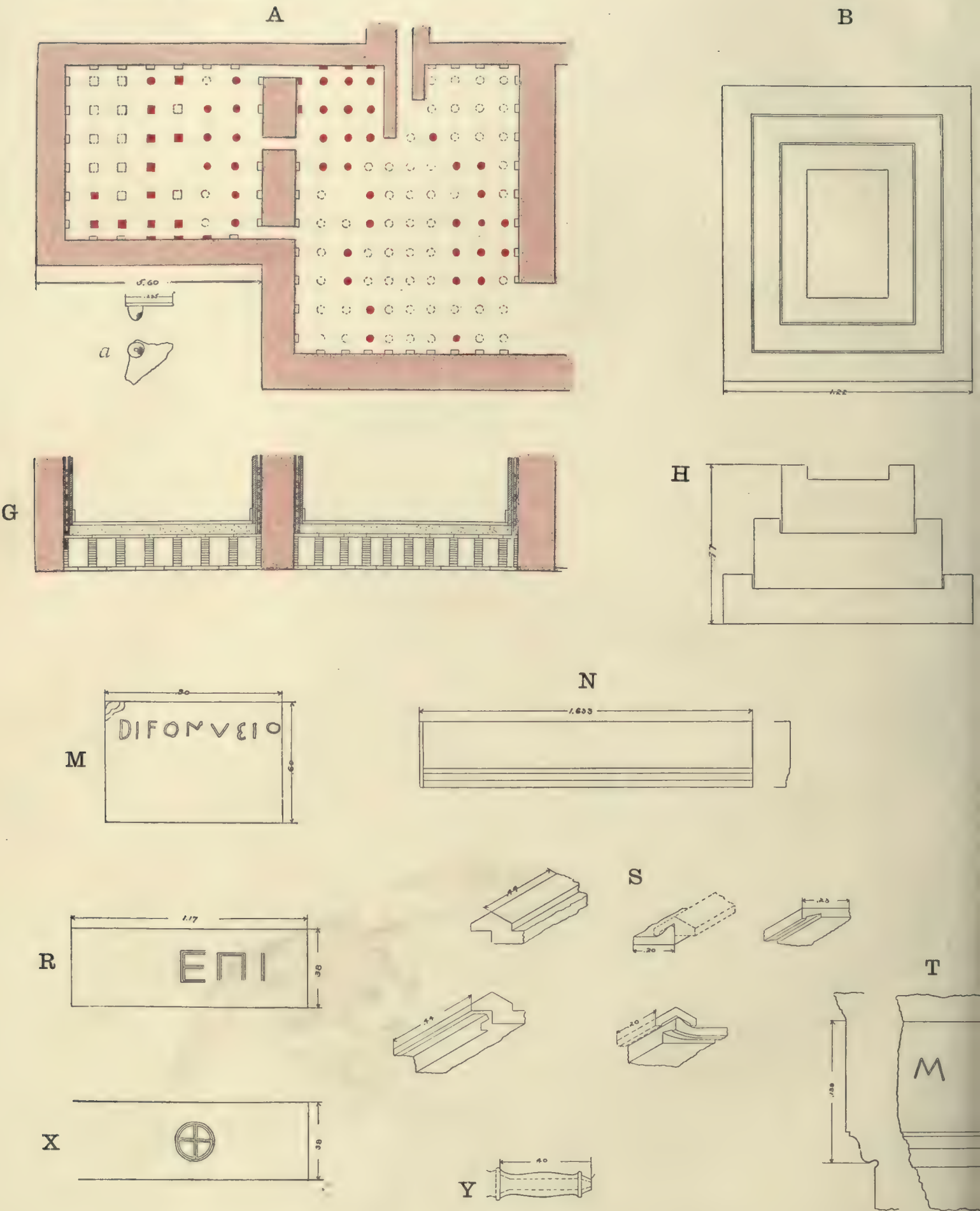




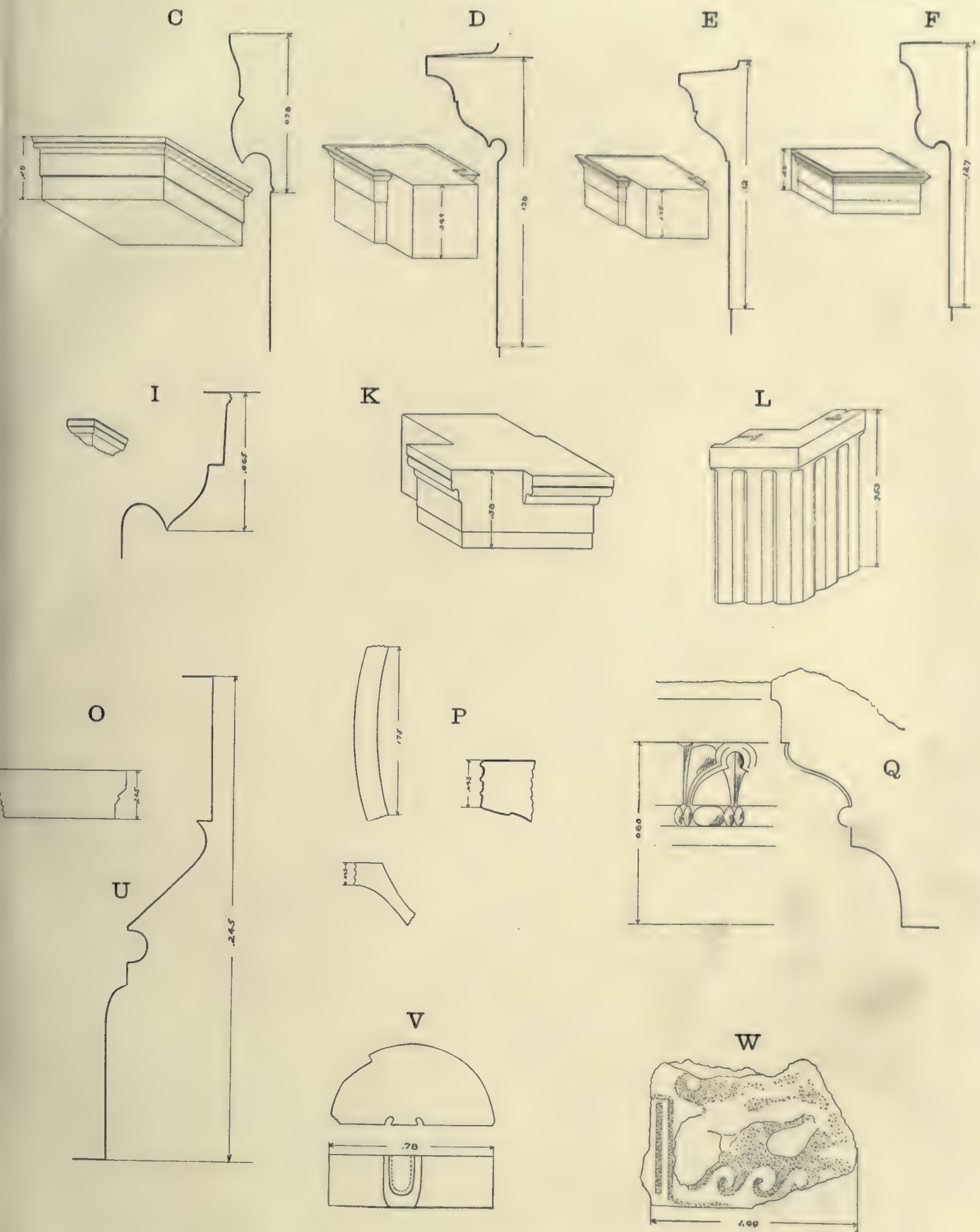




THE ARGIVE HERAEUM



ARGIVE HERAEUM.—ROMAN BUILDING (IX): FLO  
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CONSTRUCTION (A, G). FRAGMENTS FROM OTHER  
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MARBLE STATUARY FROM THE HERAEUM





## MARBLE STATUARY FROM THE HERAEUM

By CHARLES WALDSTEIN

THOUGH there were numerous finds of plastic work in other materials made during the excavations on this site (notably in terra-cotta and bronze), the larger works of sculpture are almost exclusively of marble. This has been the case in most great excavations, owing mainly to the fact that statues of other materials, bronze and gold and ivory, were, from the intrinsic value of the material, seized and utilized by the hordes that successively swept over the sites of classical antiquity.

An exception is furnished by two fragments of large terra-cotta sculpture, which escaped our notice while we were arranging our finds transported from the Heraeum to the Central Museum at Athens. They were rediscovered, by Professor Richard Norton, at the bottom of one of the numberless baskets in our storeroom. He tells me that they are certainly archaic, but were too fragmentary and amorphous to be published.

Another exception is furnished by the fragment of the rude stone pillar referred to in my General Introduction (p. 43), which, though it cannot be called a work of sculpture, must find its place here (Fig. 70), for if I am right in my surmise, it would be the earliest extant symbolical image in stone of a Greek divinity. That such pillars were frequently symbolical renderings of Greek divinities has been recognized; and at the Heraeum we hear of such a pillar as the earliest "image" round which the priestess Callithoë wound her ribbons.<sup>1</sup> This "pillar" was fractured at about half its height, and smaller fragments of the upper part were subsequently found. It was probably hollowed out at the fractured end in later times. In its present state it is 0.91 m. high by 0.47 m. wide at the base. This base is formed by cutting away the four corners of the square block so as to give a hexagonal form to the pillar, and only leaving them at about a foot from the bottom. At the front, moreover, this base projects slightly in the middle as well as at the angles, thus giving it the general appearance of the rudest primitive terra-cottas. The whole pillar tapers upwards; but just before the point where it is now fractured, in the front view there is a slight turn outwards. There is no architectural or other purpose which we could assign to it; and considering the rough primitive method in which it is worked and the corners are beveled away with some rude implement used like a saw, we venture to suggest that the most ancient pillar-like image of Hera has here been preserved to us.

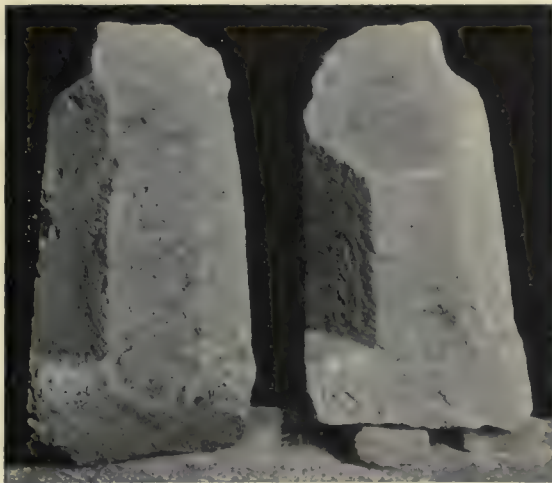


FIG. 70. — FRAGMENT OF A STONE PILLAR.

<sup>1</sup> Phoronis *ap.* Clem. Alex. *Strom.* I. 24, § 151.



It is a noteworthy fact that out of so large a number of sculptured fragments of stone preserved, there should be only two insignificant pieces of *poros* statuary, all the others being of marble. One of these *poros* fragments represents the hock of a colossal horse. These probably belonged to pedimental groups of early buildings erected many years before the destruction of the Old Temple, and may possibly have come from restorations of this Temple at a date corresponding to the erection of the temple on the Acropolis at Athens, which was adorned by the *poros* groups there found during the last excavations.

#### SINGLE STATUES.

It is also remarkable that out of this large number of marble fragments there are but few isolated specimens that can, with any degree of probability, be ascribed to separate single statues — statues, that is, which stood by themselves on separate pedestals, whether inside the buildings or in the open air. We can, in fact, distinguish as belonging to this category only the following marbles:—

I.— Four fragments belonging to a female figure of the archaic period about life-size (Fig. 71). **No. 2** is a mass of regular folds gradually converging; straight grooves, not deeply cut, with a rounded rise between each two grooves. **No. 1** is a more elaborate



FIG. 71.— FRAGMENTS OF ARCHAIC SCULPTURE.

mass of the same drapery, with a broad, central pleat-like fold, from which the smaller folds descend terrace-like. The edges are here more sharply cut, but on either side of this central massing we find the same rounded folds with straight shallow grooves. **No. 3** shows the same general folding, only here the edge of the garment falls in freer zigzags. **No. 4** is of the same size as **No. 2**. This class of drapery is well known in archaic Greek marble sculpture and has its analogies in extant statues.<sup>1</sup> **No. 6** appears

<sup>1</sup> Cf., e. g., the Hera of Samos (Collignon, *Hist. de la Sculpt. Gr.* I. p. 63); the draped female figures from Delos (Homolle, *Bullet. de Corresp. Hellén.* III. 1879, pls.

ii. and iii.); the draped female figures from the Acropolis (Cavvadias, *Musée d'Athènes*, 1886), etc.

to be a fragment of an upper arm extended, with indications of straight folds and possibly of the long hair hanging over the shoulder. A larger fragment, **No. 5**, may have belonged to the same figure, with shallow but firmly cut grooves at larger intervals than in the other fragments, converging towards one point, probably the shoulder. This appears to be a portion of the back covered by the *himation* or upper garment, and being at the back, the elevation of the folds is flatter than in the other fragments. The statue in question could not have belonged to a later time than the first quarter of the fifth century B. C.

II.— Small archaic torso of a female figure, with close-fitting upper garment and indications of a girdle (*zoné*) at the waist (Fig. 71, **No. 7**). There were long curls hanging over either shoulder. There are two terra-cottas of the archaic period<sup>1</sup> which correspond to this marble torso.<sup>2</sup>

Between these fragments of archaic sculpture and those belonging to the Graeco-Roman period there are no works which we could ascribe to single and separate statues. But of the Graeco-Roman period there are portions of two statues, the one evidently over, the other slightly under, life-size.

III.— Five fragments, probably belonging to the same statue, remain of a large draped female figure, probably seated (Fig. 72). The marble appears to me to be Parian. **No. 1** is the upper and front portion of a large female head, from upper lip to occiput. It was found during the digging at the West Building, and was evidently transferred here, at some distance from its original position, in later times. The dimensions are the following:—

Greatest height of fragment (in centimetres)	. . . . .	29.50
Greatest width “ “ . . . . .	. . . . .	22.50

<sup>1</sup> These will be figured and described in the second volume.  
<sup>2</sup> Cf. the winged “*Niké*” attributed to Archermus (Collignon, *op. cit.* I. p. 135); the statuette of one of the “*Eumenides*” from Olympia (P. Gardner, *Journal of*

*Hellen. Studies*, XVI. 1896, p. 277); *Olympia*, III. p. 27, pl. v.; similar types, Collignon, *op. cit.* I. pp. 120 ff.  
I must thank Dr. Carroll N. Brown, who rendered valuable assistance in the taking of measurements of the marbles at Athens in 1896.



FIG. 72. — MARBLE FRAGMENTS, PROBABLY PART OF A FEMALE FIGURE OF THE GRAECO-ROMAN PERIOD.



Width between outer angle of eyelids . . . . .	12.
From pupil to pupil . . . . .	8.30
From root of nose to extant end of nose . . . . .	8.20
“ “ “ “ “ end of forehead, middle of hair . . . . .	4.70
From temple to temple . . . . .	17.30

The head is evidently iconic, as is clear from the receding forehead with projecting brows, beneath which the eyes appear deep-set and at the same time bulging and heavy, encircled by band-like eyelids. These eyelids seem to join at the outer edge on the same plane, and thus, in connection with their band-like treatment and the bulging iris, suggest (when viewed hastily or from a distance) an archaic character, like that of the eyes in the heads from the Olympia pediments. But upon closer inspection it will be seen that a slight line at the outer angle of the juncture of the lids marks the continuation of the upper lid over the lower lid — a characteristic which, I have long since maintained, marks the change from archaic sculpture to the highest freedom about the year 450 B. C. The superficial “archaic” appearance of the eye is thus counteracted as regards the lids, and the later character is further accentuated by the deeply cut eyeball with pupil. Though I think the prevailing impression which has found its way into literature, that the indication of the eyeball by sculptured incision marks a late Roman origin, is as unfounded as it is widespread, the peculiar deep cutting of the pupil noticeable in the left eye of this head seems to me to point to a later period. In general, however, it will be well for us to remember that in marble statues of all periods where the iris is not indicated by incised lines, it was painted in; and that in heads like the very early head of Hera from the Heraeum at Olympia (*Olympia*, III. pl. i.) there are indications of the incised iris; while in bronze and chryselephantine sculpture the eye was generally rendered in its detail by various materials. It was only later, when in the Hellenistic and Roman period the sculptor, reveling in his technical skill as a pure modeler, dispensed with polychromy in sculpture, that the deeper carving of the pupil came in.

The iconic character of the head is produced further by the deep hollowing below and round the lower eyelid, and the sinking in of the temples at the end of the frontal bone; and the furrow slanting away from the nostril and accentuating the fleshiness of the cheek gives individuality, while indicating a more advanced age.

The elaborate arrangement of the hair, with braid following upon braid wound round the head, is paralleled in many heads of the Roman period, and appears to me characteristic of the coiffure adopted by priestesses. From this fact alone it is not impossible that the statue may have been that of a priestess of Hera in Roman times which, according to Pausanias (II. 16. 5), stood before the temple. But the late character of the work is manifest from the mechanical and, at the same time, slovenly treatment of the braids or twisted meshes of hair. These are indicated by means of shallow parallel grooves subdividing the hair at equal distances, without any variety or modeling to suggest the real texture of hair.

**No. 2** is the largest fragment probably belonging to this statue. It seems to represent the shoulder and upper arm covered by drapery. The dimensions are:—

From top of shoulder to massed folds below centre (in centimetres) . . . . .	46.
Extreme height . . . . .	53.
“ width . . . . .	29.
“ depth . . . . .	22.50

The folding is flat and superficial on the side of the shoulder and arm, deeper on the

mass hanging down inside the shoulder. But these more deeply cut fold-grooves are mechanical and coarse and throughout show the use of the drill. The short groove between the two deeper and longer folds on the top illustrates this.

**No. 3.** Part of a draped upper arm, with bare forearm of similar dimensions and marble to the previous fragments. What remains of the folding is similar in late character to the previous fragment. Compare the mechanical cutting, the shallower short perpendicular fold near the bare portion of the arm. It is not impossible that fragments 4 (hand) and 5 (thumb with round object) belonged to this arm, though the fractures are not such as to allow of piecing them together. It cannot be determined with certainty what the object to which the thumb is attached is, but it seems probable that it was the internal boss of a sacrificial patera held in the extended hand of the priestess, an action which is familiar in statues, vases, and terra-cottas. The fractured foot with elaborate sandal (6) also may have belonged to this statue.

The dimensions of the fragment of arm are:—

Extreme length (in centimetres)	. . . . .	46.
“ width . . . . .	. . . . .	29.
“ depth . . . . .	. . . . .	21.
Inside elbow joint to end of fractured forearm	. . . . .	18.
Bare forearm . . . . .	. . . . .	11.50

**IV.**—Torso of a draped figure, probably male, two thirds life-size (Fig. 73). Found at no great depth on the south slope. It apparently represents a boy, holding a large bird (dove?) in his left hand. Dowel-holes at the neck of the figure and of the bird probably point to later restorations, after the head had been broken off. The figure is clad in three distinct garments: (1) a chiton which appears clearly under the triangular opening of the second garment below the neck, (2) a thick, fluffy shirt-like garment, either of sheepskin or of rough, hairy lamb's wool, such as peasants and shepherds, particularly, wear to-day, and (3) a heavy himation over the back, the ends falling over the left shoulder and arm, which it covers; drawn under the left arm, it leaves the greater portion of the left arm and shoulder bare. The workmanship is rough and unskillful, and is either quite provincial or very late, or both.



FIG. 73. — LATE TORSO, FOUND ON THE SOUTH SLOPE.

**V.**—Finally there are several smaller fragments (Fig. 74)—heads of various sizes and workmanship, as well as an object, perhaps representing a hydria—which cannot be assigned to the main body of Argive sculpture with any degree of probability. The only one of these about which there can be any doubt is the much corroded head with a portion of neck, cheek, and lower portion of hair, between which and the fractured upper portion of the head there is a sharply cut groove. The fragment of a helmet distinctly belongs to the metopes.



## ARCHITECTURAL SCULPTURE.

The whole large mass of sculptured marble fragments, with these exceptions, belongs



FIG. 74. — FRAGMENTS FROM THE ARGIVE HERAEUM.

to one date and style of workmanship, and, as we shall later see, forms parts of the sculptured ornamentation of buildings, either metopes, friezes, or pedimental groups.

Yet it must not be believed that in the ancient days of the Heraeum there were not numerous single statues distributed over the sacred precinct. Pausanias<sup>1</sup> definitely mentions statues of priestesses and of heroes as standing in front of the temple. Some of the bases belonging to these and other statues were found in our excavations at the east end of the temple. From analogous experience in other excavations (Olympia, Delphi, etc.), we know that a small portion of the great number of statues which studded the sacred precincts of ancient sanctuaries, like trees in a grove, have come down to us, and

how vastly the works of architectural sculpture predominate in proportion.

<sup>1</sup> Paus. II. 17. 3. ἀνδριάντες τε ἐστήκασιν πρὸ τῆς ἐσόδου, καὶ γυναικῶν αἱ γεγόνασιν ἱέρειαι τῆς Ἥρας, καὶ ἡρώων ἄλλων τε καὶ Ὀρέστου· τὸν γὰρ ἐπίγραμμα ἔχοντα ὡς εἴη βασιλεὺς Ἀθγουστος, Ὀρέστην εἶναι λέγουσιν. Ibid. 7. Ἀργεῖοι δὲ καί περ κακοῦ τηλικούτου παρόντος σφίσι τὴν εἰκόνα οὐ καθεῖλον τῆς Χρυσήϊδος, ἀνέκειται δὲ καὶ ἐς τοὺς τοῦ ναοῦ τοῦ κατακαυθέντος ἔμπροσθεν. The latter passage seems to show that some of the statues of priestesses before B. C. 423 still stood in front of the ruins of the First Temple in the time of Pausanias, while the statues before the Second Temple all belonged to dates subsequent to B. C. 420. Statues of priestesses stood also before the temple of Demeter at Hermione (Paus. II. 35. 8), and at Cerynea in Achaia. There were statues of women, said to be priestesses, at the entrance to the sanctuary of the Eumenides. (Paus. VII. 25. 7.) A statuette at Paestum has been found

dedicated to Athena, representing one of the girl basket-bearers (καρηφόροι) who figured in her worship. Professor Curtius thinks that there may have been whole rows of such statuettes in the temples. See *Arch. Zeit.* 1880, pp. 27–30; Curtius, *Gesammelte Abhandlungen*, II. pp. 286–294. The Argives dated their years by the priesthood of Hera. Hellanicus the historian, B. C. 480–395, wrote a history of the priestesses of the Argive Hera, which must have been of great importance for Greek chronology. See Preller, *Ausgewählte Aufsätze*, pp. 51 ff.; *Fragmenta histor. Graec.* ed. Müller, I. pp. xxvii. seq. 51 seq. Frazer's *Paus.* III. (notes), p. 182. Similar bases of statues to those in front of the Heraeum have been found also at Epidaurus. Statues and statuettes of basket-bearers have been found at Athens, Eleusis — in fact, on most sites where there was a temple dedicated to a female divinity.



This is due to the fact, mentioned above, that a large proportion of such single statues were of bronze, which were the first to be carried off, and, furthermore, to the fact that statues which stood below, on the level of the terrace, were more readily destroyed and taken away by the iconoclast and despoiler than those which ornamented metopes or pediments of a high building. We remember, for instance, what difficulties the Venetians, and later Lord Elgin, had in lowering statues from the Parthenon. At the Heraeum such statues could be procured only after the building had fallen in, and then had to be extracted laboriously from beneath the *débris* of the ruined building.

Undoubtedly this was the fate of this ancient sanctuary of Hera. From its lofty position on the slopes of the hills, it commanded the vast plain of Argos. But at the same time this glorious group of resplendent buildings had to pay, as it were, the penalty of its serene position and of the attractive beauty of its shrine gleaming through the limpid atmosphere of Hellas to the furthest confines of the mountain-encircled plain. There was no point from which it could not be seen. And thus the Byzantines, Franks or Normans, Slavs or Albanians, Venetians, Turks and modern Greek peasants, passing through or settling in any part of the plain, made the Heraeum their stone quarry and — their lime-kiln.<sup>1</sup> The "Larisa" or mediaeval citadel of the town of Argos, the Palamidi of Nauplia, and, nearer home, the Byzantine and Frankish churches of the neighboring villages, Chonica, Merbaka, Anyphi, Priphtani, Pasia, as also the well-stones, lintels, and thresh-olds of the peasants' houses, all made heavy drafts upon the ruined Heraeum for their building material.

To this must be added as an important fact (to account for the comparatively small remains of extant architectural sculpture), that in the manufacture of the great amount of excellent mortar used by these later builders, the lime produced by the burning of marble was preferred to all other, and that thus marble sculpture of all kinds was especially sought after.

What was not carried away or destroyed by the hand of man was undone by nature. The buildings that were not actually pulled down were shaken down by earthquakes,<sup>2</sup> and the remains of sculpture lying about the ground and beneath the *débris* of the buildings were either carried off by the despoiler, or further mutilated by the iconoclastic hordes passing through or dwelling in the Argive plain, because they represented Pagan religion. The great height from which the sculptures of pediment or entablature fell to the ground caused the thinner and more undercut portions, extremities of bodies and drapery, to break off most freely. It was not worth the barbarian's while to transport these smaller fragments to his lime-kiln or to use them as building stones; thus the larger portable masses of marble — torsi, larger heads, etc. — were first chosen by him, and, if too large, they were split or cut into portable larger fragments.

We can thus understand why the excavations yielded so few specimens of sculpture besides architectural sculpture, and, furthermore, why there should be found so few larger or complete specimens of even these works; we can realize also how fortunate are the accidents that have yielded such fine and representative specimens of important sculpture, for which, under these untoward conditions, we hardly dared hope.

The vast number of smaller pieces, the numerous hands and feet of men and horses,

<sup>1</sup> See W. G. Clark, *Peloponnesus*, p. 84.

<sup>2</sup> That there must have been some such destruction, and that it was probably by earthquakes, is proved by metope fragments found underneath other heaped-up

fragments from the South Stoa on the pavement of the latter, the roof having been broken while other portions of the Stoa stood when the temple fell in.



of armor and drapery, evidently belonging to metopes or friezes in relief, of themselves make us realize that the Second Temple was decorated with sixty-four metopes; while, as will presently be proved, the many fragments of larger figures in the round belonged to the pedimental groups of that temple, which each contained at least thirteen life-size figures — together at least twenty-six, and probably well over thirty statues in the round. Yet though of the metopes only three larger pieces and, fortunately for us, seven complete heads were found, only one of these larger pieces could, after patient search among the fragments, be so supplemented as to form an almost complete metope (PLATE XXX.). Of the pedimental statues there is only one torso and a few larger pieces, while we found of these but one head, the attribution of which to a pediment, however, is not beyond all doubt.

Still we may maintain, with some degree of certainty, that all these marble fragments formed part of the sculptured decoration of the Second Temple (the only architectural sculpture noted by Pausanias on this site), and that the other buildings in the sacred precinct of the same period give no evidence of having been decorated with figures and groups either in relief or in the round.

These conclusions are based upon the collective arguments which will form the remainder of this introduction.

The fragments of relief work, as well as of statues in the round, are all of the same "Parian" marble.<sup>1</sup>

#### THE METOPES.

That metopes surmounted the columns of this Doric temple is, of course, proved architecturally. The question is whether all, or how many, of these were decorated with sculpture in relief.

The existence of such sculptured decorations is proved by Pausanias's phrase *ὑπὲρ τοὺς κίονας*. Among our finds there are marble reliefs which were undoubtedly from metopes of this temple. There are no less than twenty-nine separate fragments which show the high relief work rising from the background of the metope; while two metopes are nearly complete, and at least five larger fragments give us the essential portion of a figure on a metope. From these as well as from architectural evidence we learn that these metopes were 1.029 m. high by 0.978 m. wide, and that the block from which they were carved was about 0.34 m. thick. The unworked backing, or portion remaining for the background, averages about 9 cm. The highest point of relief from the background is 26 cm. This corresponds with the height of the relief of the metopes of the Parthenon. The extreme original thickness of the metopes would thus be about 34 cm., or about one foot. Out of this background the relief rises very boldly, the heads and the limbs being quite undercut and worked in the round. In falling these would break away from the relief, while the thin portions of the background would also be fractured into many

<sup>1</sup> I did not think that on so important and technical a question as the identification of different marbles I could trust my own judgment; and considering the scientific mineralogical work done by Professor Lepsius, of Darmstadt, on Greek marbles, I felt that in this instance his help ought to be invoked. Accordingly I sent him specimens of marble chips taken from the fractured portions of our sculptures, which were necessarily very small. He warned me in his letter that in view of the smallness of

the specimens it would be difficult if not impossible to identify the marbles beyond all doubt.

These doubts and misgivings of Professor Lepsius have been fully justified, for portions of what can be proved to be the same metopes were assigned to different marbles. I thus abide by the decision at which I arrived and which is supported by the judgment of Dr. H. S. Washington, as well as our helpful friend Mr. Kalourgis, the marble-worker at the Museum at Athens, in considering all these heads and fragments to be of Parian marble.



pieces. Thus it is that so many fragments of legs, feet, and arms, and undercut drapery, together with several solid heads, have come down to us, and that the larger pieces of metopes that have been preserved are those in which the torso formed one thick mass with the background.

Contrary to what might be inferred from the description of Pausanias (see below) and from analogous buildings, such as the "Theseum" at Athens, the sculptured metopes of the Heraeum were not confined to front and back, — perhaps overlapping for a few intercolumniations on either side, — but ran round the whole of the temple. This might of itself have been inferred from the comparatively great number of limbs, hands, and feet belonging to such metopes which have come down to us. A general view of fragments on the floor of one gallery in the Athens museum, assigned to us for purposes of sorting, will illustrate this (see Fig. 75).<sup>1</sup> This is furthermore confirmed by the fact that a



FIG. 75. — MARBLE FRAGMENTS, AS ARRANGED FOR SORTING ON THE FLOOR OF A ROOM IN THE CENTRAL MUSEUM, ATHENS.

The statues in the background do not belong to the Heraeum Marbles. The statue on the right is the Diadumenos from Delos.

number of metope fragments were actually found, not at the front and back of the temple, but at the north and south sides. Several of these (among them one complete and one fragmentary metope head) were discovered on the spot on which they must have fallen from the entablature which is on the south side of the temple. Crashing through the roof of the South Stoa, these and other fragments from the falling temple above were deposited on the floor of this Stoa, and were covered anew when the Stoa itself was destroyed.

There is a further question, whether all these fragments of relief sculpture, which

<sup>1</sup> Rangabé (*Ausgrabungen*, etc., p. 23) mentions 42 fragments of hands and arms, and 160 fragments of feet and legs found during his tentative excavations.



undoubtedly are of the same period and workmanship and of the same building, all belong to the metopes, and whether the temple may not have contained other ornamentations of relief-work, a continuous frieze, for instance, as is the case in the Parthenon? The varying dimensions of some of these fragments might encourage such an hypothesis; for there are several fragments, such as a beautiful front of the torso of a draped female figure, several hands, arms, legs, and feet, as well as two heads, which differ in dimensions from the generality of these metope fragments. But this doubt is dispelled at once, since these divergences are too few in number to justify the assumption of smaller relief decoration, and since these differences in size are common in ancient Greek metopes. The most striking material for comparison with our works are the reliefs from the Parthenon. We discover, for instance, that one of our larger relief heads with a helmet (PLATE XXXIII.) measures from top of completed helmet to chin about  $19\frac{1}{2}$  cm., while the Amazon head from the metopes (PLATE XXXI., No. 3) measures only  $18\frac{1}{2}$  cm. from the peak of the helmet to the chin, but we find still greater divergences between different heads among the Parthenon metopes. The ordinary Lapith head from the Parthenon measures about 17 cm. in height, while a Centaur head from top to point of beard measures about 25 cm. Even in the Parthenon frieze there are differences more marked than in the Heraeum fragments before us. So the head of Zeus from the eastern frieze measures about 20 cm. in height, while the head of the girl from the central slab immediately beside him measures only 13 cm. Finally, if we take two metopes from the Parthenon (Michaelis, *Der Parthenon*, pl. iv. 32 and pl. iv. 30), marked discrepancies in the dimensions of other parts of the body occur. Thus the Lapith of No. 32 measures but 25 cm. round the neck and  $28\frac{1}{2}$  cm. round the calf, while No. 30 is as much as  $35\frac{1}{2}$  round the neck and  $30\frac{1}{2}$  round the calf. Therefore, the slight discrepancy in size between some of our relief fragments in no way affects our conclusion, based upon style and workmanship, that they all formed part of the metopes of the Second Temple.

How the subjects mentioned by Pausanias are to be distributed among the metopes can be discussed only after we have examined the question of the pedimental sculpture.

#### THE PEDIMENTS.

Pausanias describes the sculptured decoration of the Heraeum in the following terms: "The sculptures over the columns represent, some the Birth of Zeus and the Battle of the Gods and Giants, others the Trojan War and the Taking of Ilium."<sup>1</sup>

Assuming for the moment that the phrase "over the columns" included pediments, there is as yet no consensus of opinion as to how the scenes enumerated by Pausanias were distributed. Now it appears evident, and is admitted by all authorities, that the words of Pausanias imply a broad twofold division in the distribution of the subjects.<sup>2</sup> He seems clearly to indicate that the Birth of Zeus and the Gigantomachia were on the one side (probably the front) and the Trojan War and the Capture of Troy on the other (the back). All authorities seem agreed that one scene certainly belonged to a pediment, probably the eastern or front pediment, — namely the Birth of Zeus.<sup>3</sup> It is in

<sup>1</sup> Frazer's translation, *Pausanias*, I. p. 95 (II. 17). The Greek text runs: ὁπόσα δὲ ὑπὲρ τοὺς κίονάς ἐστιν εἰργασμένα, τὰ μὲν ἐς τὴν Διὸς γένεσιν καὶ θεῶν καὶ γιγάντων μάχην ἔχει, τὰ δὲ ἐς τὸν πρὸς Τροίαν πόλεμον καὶ Ἰλίου τὴν ἄλωσιν.

<sup>2</sup> Cf. Waldstein, *Excavations of the Am. Sch. of Athens at the Heraion of Argos*, 1892, p. 6; Frazer, *op. cit.* III. 182.

<sup>3</sup> It is hardly conceivable that this scene could have been split up into single metope compositions, while its intrinsic character would fit it for the principal pediment. Exactly how the scene was represented it is difficult for us to conceive, for we have no good guide in extant monuments, nor do the literary records instruct us upon the



the distribution of the three other scenes that we meet with the greatest divergence of opinion.

Curtius<sup>1</sup> and, following him, Welcker<sup>2</sup> assign the Capture of Troy to the western pediment, and then appropriately place the Gigantomachia below the Birth of Zeus in the metopes on the east side, leaving scenes from the Trojan War to adorn the metopes on the west, beneath the crowning event in the war, the Capture of Troy. Professor Tarbell and Dr. Bates<sup>3</sup> put forward the conjecture — the ground for which I fail to see — that the Birth of Zeus and the Battle of Greeks and Trojans occupied the pediments, the Gigantomachia and Iliupersis occupying the metopes. Mr. Frazer,<sup>4</sup> while considering my first suggestion "plausible," inclines more towards the restoration of Curtius.

In the preliminary publications of our first year's finds,<sup>5</sup> I based my conjectural distribution chiefly upon the comparison of this passage in Pausanias with his description of the pediments of the Parthenon (I. 24, 25). The description would thus follow the usual method of the periegete in enumerating the various objects and places as he successively saw them in their place, and he would thus group together first those scenes at the front and then those at the back. The further analogy of the Parthenon, in which a scene from the Capture of Troy was represented in the metopes, and the analogy of a scene of departure and preparation to be found in the eastern pediment of the temple of Zeus at Olympia, led me to assign the Capture of Troy to the metopes and the departure of the heroes for Troy to the pediment. The appropriateness of representing the moment of preparation for their departure to Ilion is manifest, as, according to a late tradition,<sup>6</sup> the Heraeum was the spot chosen for this purpose.

But the bearing of at least one of our subsequent finds, the significance of which is made clearer by the very comparison with the metopes of the Parthenon, causes me to doubt the claims of my own conjecture and to revert to the hypothesis of Curtius, the

strength of which, on other grounds, I had always felt. The find in question is the archaic torso of a *ξόανον*, round the back of which a life-sized arm is roughly sculptured — evidently the arm of one clasping the sacred image as a protection against an advancing foe (Fig. 76). This finds its complete parallel in the scene represented on a metope of the Parthenon showing Helen clasping the Palladium, while Menelaus is advancing



FIG. 76. — MARBLE IMAGE, WITH HAND GRASPING IT AT THE BACK.  
Probably from the Western Pediment of the Second Temple.

artistic presentation of this obscure moment in Greek mythology.

<sup>1</sup> *Der Peloponnes*, II. p. 570.

<sup>2</sup> *Antike Denkmäler*, I. pp. 191-194.

<sup>3</sup> *American Journal of Archaeology*, First Series, VIII. (1893), p. 24.

<sup>4</sup> *L. c.*

<sup>5</sup> *Excavations of the American School at the Heraion*, p. 7.

<sup>6</sup> *Dictys Cretens. Bell. Troj.* I. 16.



towards her, a scene so ingeniously reconstructed from the fragmentary metopes by Michaelis in<sup>1</sup> a comparison with a red-figured vase painting. But our ξόανον, with the arm, must, from the dimensions,<sup>2</sup> be assigned to the pediment and not to the metopes, and I therefore conclude with Curtius and Welcker that the general representation of the Trojan War is to be assigned to the western pediment, and the separate scenes from the Trojan War to the metopes below it.<sup>3</sup>

The disjointed scenes from the Trojan War would thus reach their climax in the most important and final event in that great drama, the Capture of Troy in the pediment.



FIG. 77. — FRAGMENT OF A METOPE, WITH PELTA.

It is probable that the patron divinity of the Atridae, Hera, was the central figure in this pediment, presiding over the victory of the Greeks. The highest types of Hellenic life in divine and heroic mythology would thus be forcibly presented in the front and back of this temple, as in the Parthenon a great and consistent idea combines the sculptures of the front and back. We should then have represented on the Heraeum:—in the front, the establishment of the rule of the great Hellenic divinity, Zeus, whose birth marks the downfall of Cronus and the overthrow of the giants by Zeus and the divinities over whom he presides; in the rear, the assertion of the national unity and national superiority of the Hellenic people over whom these gods rule, in the overthrow of the great eastern rival, and the victory of the heroic ancestors of the historical Hellenes (headed by the Argolic Atridae). All these sculptures illustrate the great steps in the establishment of Hellenic civilization, its social, conjugal, and domestic laws, over which Zeus and Hera presided. The front refers to Zeus, as the rear shows the sway of Hera, in truly typical scenes from Greek mythology.

In the preliminary publication I had also suggested that Pausanias may have described merely the metopes in front and rear, and that—as we should expect from his cursory description of the Heraeum—he had omitted all mention of the scenes depicted in the metopes of the side. Even after our first year's excavation it appeared to me probable that an Amazonomachia was represented in the metopes of at least one of the sides. This hypothesis has since received confirmation from our discoveries. Among our marbles there are a head (PLATE XXXI., No. 3) and several torsi (PLATE XXXV.) which are distinctly of the type of Amazons; another fragment of relief appears to me a pelta (Fig. 77), the shield characteristic of Amazons.

<sup>1</sup> *Der Parthenon*, p. 139.

<sup>2</sup> The dimensions of this fragment are:—

Extreme height (in centimetres) . . . . .	34.
“ breadth . . . . .	27.
“ thickness . . . . .	15.
From breast to breast . . . . .	9.5

Thickest part of arm on back . . . . . 8.2

Length of arm from wrist to elbow . . . . . 22.

<sup>3</sup> I bow to the force of Mr. Frazer's criticism (*l. c.*) of my rendering of the τὰ δὲ ἐς τὸν πρὸς Τροίαν πόλεμον as implying the preparation for the departure.



Moreover it is hardly conceivable that two definite battle-scenes could have been continued throughout sixty-six metopes. Even on the sides of the Parthenon the series of Centauromachia-metopes was interrupted and varied by interpolated subjects. Thus the Amazonomachia was probably introduced on one or both of the long sides of the Heraeum. If on one only, the other side may have been decorated with the Centauromachia, though no traces of this subject have come down to us among our fragments.

According to the evidence at our command, both literary and monumental, we should assign the following subjects to the different parts of sculptured ornamentation on the Heraeum:—

The eastern pediment contained the Birth of Zeus — perhaps with Cronus and Rhea, whose rule is about to cease at that moment, in the centre. The western pediment had the Capture of Troy, with perhaps Hera, or Zeus and Hera, presiding over this first victory of the Hellenic race under their divine sway. The eastern metopes contained scenes from the Gigantomachia, as the western had representations from the Trojan War; and these scenes may have overlapped from the east and west front to either side on north and south. But the bulk of the metopes on these sides were decorated with the Amazonomachia and, possibly, the Centauromachia or some similar mythological scene. These (with the exception of the Birth of Zeus, which appears to have been an individual and



FIG. 78. — CORNER OF THE ROOM IN THE CENTRAL MUSEUM, ATHENS, CONTAINING FRAGMENTS OF DRAPERY FROM FIGURES IN THE ROUND, PROBABLY FROM THE PEDIMENTS OF THE HERAEUM.

original idea of the great Argive artist) are subjects with which we are familiar in the fifth-century buildings (the Parthenon, the temple of Athena at Aegina, the temple at Sunium, the temple of Apollo at Bassae, the temple of Zeus at Agrigentum, etc.) and on numerous works of minor art in all periods. No doubt we must look backwards to the great mural paintings by Polygnotus for the establishment of these scenes in art, and not to the works of sculptors, for he appears to have furnished the sculptors with the dramatic compositions that deal with these subjects.

We have hitherto proceeded on the assumption that the Heraeum was decorated with pedimental statuary as well as with metopes. Before our excavations this assumption was founded on insufficient evidence; for the phrase of Pausanias, *ὑπὲρ τοὺς κίονας*, is



so singular when applied to pediments that, taken by itself, it would lead us to infer that there were only metopes, for had he meant to include pediments he would, following his usage, have added some such phrase as ἐν τοῖς καλουμένοις ἀετοῖς. Even quite recently, since I published the results of our first year's work in 1892, Mr. Stuart Jones<sup>1</sup> maintains that the phrase used by Pausanias "unmistakably refers to metopes" and not to pediments. But the excavations show beyond all doubt that there were sculptures in the pediments. Among our finds are many fragments (Fig. 78), of the same style and period, that formed part of statues in the round and not of reliefs, which could not all have belonged to single statues placed separately on their pedestals in monumental repose. The action of the bodies as indicated in the numerous fragments, the fluttering of drapery of figures moving rapidly forward or through the air, could not, especially in this period, have come from single statues placed in the open air or within buildings. Even if there had been one or two such exceptional statues, there could not have been so large a number as is suggested by a mere survey of such fragments massed together, for purposes of sorting, in a corner of our room in the Museum of Athens.

It might perhaps be held that some of these fragments of drapery, drawn tightly

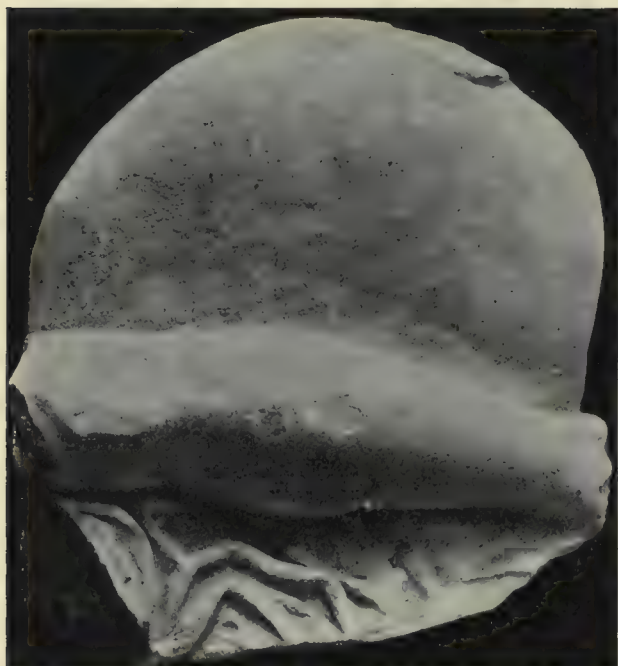


FIG. 79. — FRAGMENT OF A LEG RESTING UPON A CUSHION, PROBABLY FROM A PEDIMENT OF THE HERAEUM.

round the limbs or fluttering freely, belonged to Niké-like figures used as Acroteria or corner decorations, as at Epidaureus. But these fragments point to statues in life-size, which Acroteria would not have been. Furthermore, even the extant fragments furnish too large a number of such figures for Acroteria. Finally, several of these distinctly show that the statues to which they belonged were meant to be seen from a side view and not from all sides, and this treatment clearly indicates pedimental statuary.

Further, the fragment representing the lower portion of a leg resting upon a cushion (Fig. 79) can hardly be explained unless as a part of a reclining figure at the angle of one of the pediments, as we find that the figures at the angles of the western pediment of

the temple of Zeus at Olympia were resting their arms on cushions.<sup>2</sup>

Finally, this is confirmed by the backs of several extant fragments. First, the beautiful torso of a draped female figure found by Rangabé (PLATE XXXVII.) shows, with the exquisite finish of the front, a rude treatment of the back, which could be found only in a pedimental figure. The last and most convincing evidence is furnished by a small

<sup>1</sup> *Anc. Writers on Gr. Sculpt.*, p. 138: "Waldstein appears to take Pausanias's words to be a description of pediment sculptures. This would be τὰ ἐν τοῖς ἀετοῖς in the language of Pausanias; while τὰ ὑπὲρ τοὺς κίονας unmistakably refers to metopes."

<sup>2</sup> The dimensions are:—

Extreme length from end of drapery to button of cushion (in centimetres)	36.
Extreme breadth along leg	32.
Thickness	24.
Length of leg from ends of fractures	32.
From below knee to fracture at ankle	23.
Thickness of calf	9.3

fragment of a large figure (Fig. 80), a piece of drapery and shoulder, of which the back, treated in the same manner as the female torso, has a large square hole for a dowel, which, as we know from the Parthenon, was the regular means of fixing the pedimental statues to the tympanum of the pediment.<sup>1</sup>

We shall be less astonished to find divergences of dimension among the pedimental figures than in the case of the fragments from the metopes. We find these divergences

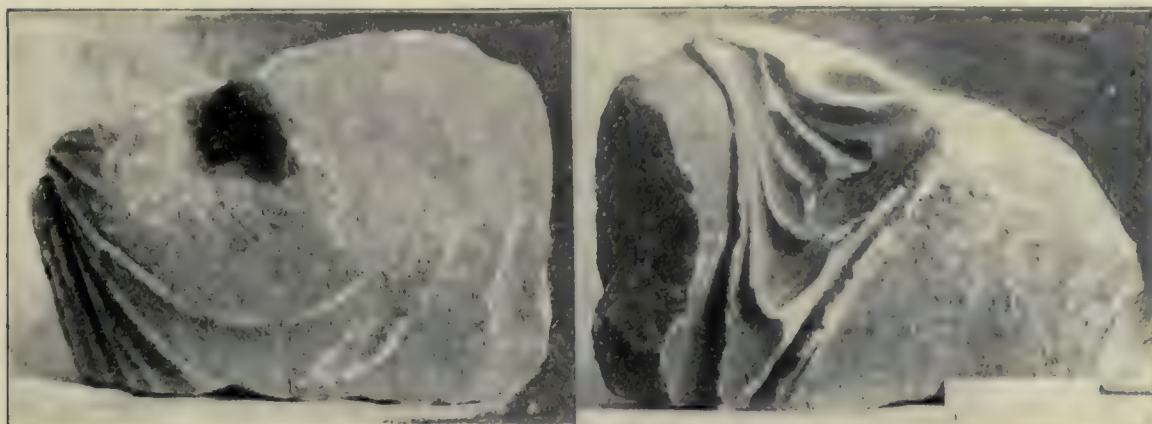


FIG. 80. — FRAGMENT OF A PEDIMENTAL FIGURE FROM THE HERAEUM.  
The back view shows the dowel-hole.

in the earliest stages of pedimental sculpture in the round, such as the *poros* sculptures from the Acropolis,<sup>2</sup> the figures found at Delos by the French,<sup>3</sup> the pediments from Aegina in which the statues of the eastern pediment are on a distinctly larger scale than those of the western,<sup>4</sup> the central figures of the Olympia pediments,<sup>5</sup> which are much larger than those in the angles. In later times, in the Parthenon, we find that the torso of Poseidon and that of Athene are on a much larger scale than are those further removed from the centre. The same difference is found in the statues ascribed to the Epidaurian temple of Asclepius, and many others.

While, therefore, the pedimental sculpture of the Heraeum was in scale about life-size, some fragments, such as the leg on the cushion, which probably was placed at the extreme angle of the pediment, as well as several nude legs and feet of warriors (see Fig. 81), are slightly below life-size and differ slightly among themselves.

There are also slight divergences of workmanship and style, — certainly not greater than are to be found among the Parthenon marbles, if as great, — yet all insignificant in comparison with the technical resemblances.

#### THE GENERAL STYLE OF THE HERAEUM MARBLES.

The general workmanship, the actual method of carving the marble, and the peculiar use of tools are markedly the same, not only among the fragments coming from the

<sup>1</sup> The dimensions of this fragment of shoulder and front of drapery are : —

Extreme height of fragment (in centimetres) . . . . .	27.
"    breadth . . . . .	37.
Thickness . . . . .	21.
The dowel-hole is (in mm.) in height . . . . .	5
in width . . . . .	4
in depth . . . . .	7

<sup>2</sup> Collignon, *op. cit.* pp. 205–215.

<sup>3</sup> *Bullet. de Corr. Hellén.* III. (1879), pp. 515 ff. (Holle).

<sup>4</sup> Collignon, pp. 286–300.

<sup>5</sup> See *Olympia*, III., *Sculpturen*, pp. 44 ff.



metopes, but also in those which we assign to the pediments. In contradistinction to the Parthenon marbles (where even the parts that were not visible to the spectator, the backs of the pedimental figures, received a comparatively high finish), these works are roughly blocked out on the back and on the inner side of the figures that are freely undercut from the background of the metopes.<sup>1</sup> The treatment of the back of the large pedimental torso (PLATE XXXVII.) illustrates this fully. This rough working of the invisible portions stands in the strongest contrast to the high and delicate finish of the nude and the drapery where they were visible.

The blocking out and the working away of superfluous marble (the rough surface thus remaining invisible, or being carefully worked over in the finish when visible) was carried out, moreover, in a peculiar manner, the traces of which can still be clearly recognized.



FIG. 81.—LEGS AND OTHER FRAGMENTS, PROBABLY FROM THE PEDIMENTS OF THE HERAEUM.

This peculiar method consists in the free use that is made of the drill. The drill was of course frequently resorted to, to bore holes for the fixing of bronze ornaments or accessories to the statues, as is evident in the earhole of the large Hera head (FRONTISPIECE and PLATE XXXVI.), at the side of the helmet (PLATE XXXI., 4), at the side of the large torso from the pediments (PLATE XXXVII.), or the warrior head from the metopes (PLATE XXX.); as well as in the hands holding swords and spears (Fig. 82). Its use is not uncommon for this purpose, for we find it as early as in the figures from the pediment of the temple of Athena at Aegina. But a more peculiar use of the drill for blocking out or undercutting the marble is manifest in these Argive sculptures, and this method I have not met before.

When the sculptor had to cut away the marble from the back or the side of a head, as it rose freely from the

<sup>1</sup> PLATE XXX., and the backs or sides of heads nearest the background in the metopes, PLATES XXXI., XXXII., XXXIII.

background in the high relief of the metopes, he saved himself trouble by using the drill, which he ran through the portion of marble between the head and the background, which was to be worked away in order that the head should stand out freely. He thus weakened the "isthmus" of marble, so that it did not require violent chopping with mallet and chisel to cut away the solid marble, for this might have fractured the whole head. Thus in the female head (PLATE XXXII., 1 and 2), at the unfinished side nearest the background, we see two broad runs or grooves which were forced through the marble "isthmus" holding the head to the background. It was thus made easy for the sculptor to work away the marble from the back of the head without fractures. This same method, with the same use of the drill, we find applied, not only to other heads from the metopes, such as the back of the head in PLATE XXXI., 1 and 2, but also in other portions of figures, even in those from the pediments. So, for instance, the fractured lower portion of a draped figure from the pediments (PLATE XXXVIII.)

clearly shows beneath the drapery that has been broken away, behind the foot and between it and the plinth upon which the figure stood, the hollowing out and undercutting of a triangular space by means of a series of such drill holes.

Now in later times, especially in the Hellenistic and Graeco-Roman periods, the drill was constantly used by sculptors (see above, p. 143). But in those works this mechanical appliance was used on the visible finished surface, in order to economize the artistic labor of the sculptor in giving grooves to the drapery and similar phases of actual modeling. The result is an inferior artistic effect, in which the mechanical working obtrudes itself to the detriment of the illusion which careful modeling and hand finish (such as we find in our Argive marbles) produced upon the spectator. In our marbles the drill is never used to work the finished fold groove, but has only been applied for the rough blocking out

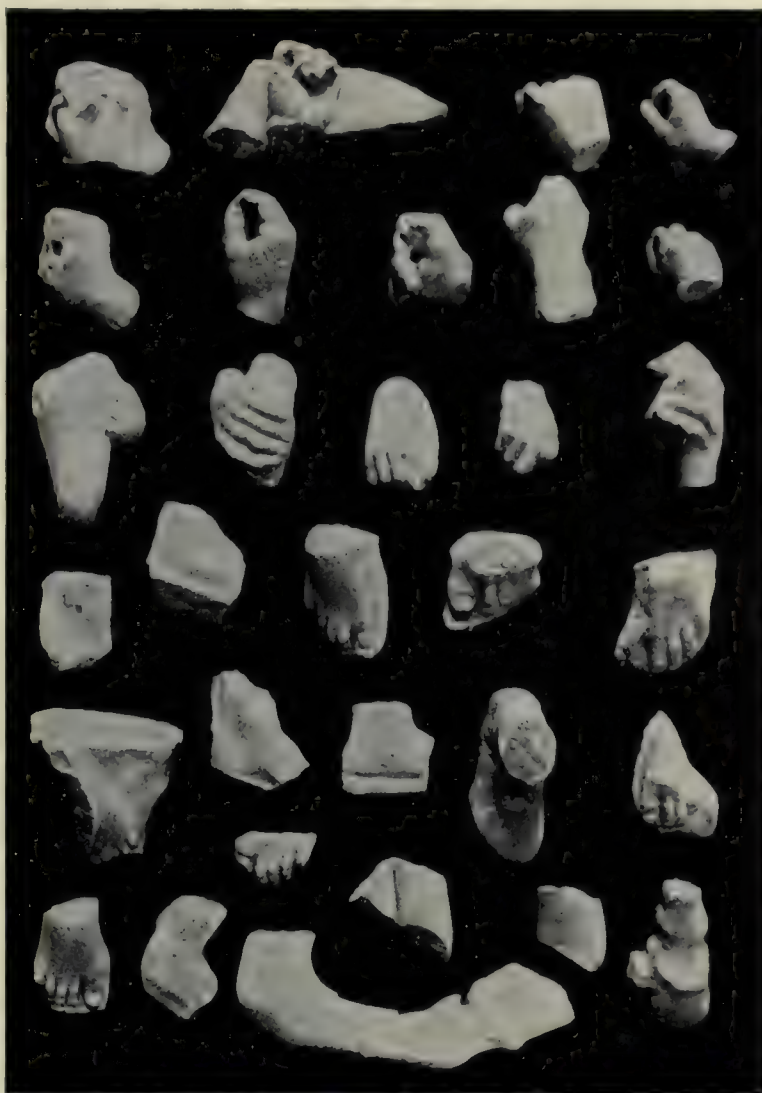


FIG. 82. — FRAGMENTS FROM THE METOPES: HANDS THAT HELD SWORDS AND SPEARS, AND FEET.



and working away of superfluous material. We detect its use only in those portions which are not meant to be seen.

In all visible portions we must be struck by the complete naturalness and truth in the rendering of pose and movement, and by the exquisite finish of the surface. In this the mechanical working of the material never obtrudes itself, and each minutest part is treated with a care and finish unequaled or, at all events, unsurpassed by any extant works. And this minute finish becomes the more remarkable when we remember that the figures in the metopes were only half life-size, and, placed as they were about thirty-eight feet from the ground, were hardly visible to the spectator in the details of their elaboration.

The freedom, naturalness, and boldness of pose and movement in all these figures is not only evident in a few rather complete torsi that have come down to us, such as the two



FIG. 83. — FRAGMENTS FROM THE METOPES, ILLUSTRATING CHIEFLY THE SHARP YET DELICATE CUTTING OF THE FOLDS IN DRAPERY.

metopes of PLATES XXX. and XXXIV., the draped torsi from the pediments of PLATE XXXVIII., but in similar fragments of bodies (Fig. 83), as well as in the legs, hands, and feet of Fig. 82, all of which enable us to reconstruct in our minds the flowing composition of metopes and pediments. The attitudes and movements of these figures are, on the one hand, as far removed from the constraint of the archaic period or the severe art of about the middle of the fifth century as they are, on the other hand, from the violent contortions of the Hellenistic period, or even the more passionate movement which began with Scopas.

As regards our appreciation of the treatment of the nude figure, we can only fall back upon the beautifully preserved torso of PLATE XXXIV., — which, however, is enough

in itself, — and the numerous smaller fragments of bodies, legs, hands, and feet. The treatment of the nude female figure we can divine only through the treatment of those portions which are covered with the thin undergarment, and this leads us to form the very highest estimate in this particular. The absence of the nude female figure among so



great a number of fragments perhaps justifies us in concluding that the female figure was not represented in its nude form; and this would strengthen our general conclusion that these works are not to be placed in the fourth century B. C., but in the fifth. Judging from the extant remains of draped female figures, however, we may venture to say that at least as regards the supreme finish of modeling, no works of architectural sculpture manifest the same perfection. It is not too much to say that not one of the Lapithae from the Parthenon metopes shows the same delicacy of modeling and finished surface work as does the torso of the youthful nude warrior from our metope. This is evident if we examine every portion of the body; and for the supreme finish of detail, I would draw special attention to the hand pressed against the armpit, and to the peculiar and unique treatment of the inguinal region, which is so striking that anatomists have assured me it must have been copied from an individual model showing this abnormal idiosyncrasy.<sup>1</sup>

In spite of this minute finish it can never be said that the figures, taken as a whole, present that exaggeration and obtrusion of the anatomical study of muscles or, on the other hand, that extreme softness and sensuousness (*morbidezza*) in the treatment of the nude which characterizes the art of a later period. There is in them still a certain hardihood that shows them to be the offshoot of a Peloponnesian feeling, the precursors of which we might find in the Aeginetan marbles.

In the treatment of the drapery, the fragments, whether in relief or in the round, all manifest the same character. They are bold and free and delicate without conventionalism or restraint, and yet without florid exaggeration or want of conciseness. The larger folds cover the limbs in broad masses, freely undercut and sharp in their edges, resembling in this respect the pedimental drapery of the Parthenon. Yet if we except the Reclining Fate (or Thalassa, as I should call her) from the eastern pediment of the Parthenon, the elaboration or finish of the drapery in the majority of our figures and fragments goes a step further and finds its nearest parallel in some of the Nikés from the balustrade of the temple of Niké-Apteros. This is especially the case with the system of small folds encircling or starting away from the breasts of female figures. These folds are worked in delicate relief from the smooth surfaces where the thin drapery is stretched over the rounded forms; yet in spite of the delicacy of these reliefs, they never lose their sharpness of edge, as, for instance, is the case with the Olympian Niké by Paeonius.

No student who gives some time to the examination of the numerous fragments of drapery from these marbles can fail to receive the impression that they are all of the same workmanship and style, whether they belong to figures in relief or in the round.

If now we turn to the heads, we shall find, taking them as a whole, that, compared with the treatment of the bodies, nude and draped, they are comparatively severer. To begin with, not one of them can be said to reflect in its expression the strong movement and action which are manifest in the treatment of the extant bodies and as the scenes we know to have been depicted would lead us to expect. The female head of PLATE XXXII., 3, was evidently pulled to the side with violence, the hair on the top of the head clutched by a warrior; and yet the expression of emotion was limited to the attitude of the head and a very delicate and slight indication in the upward and sideward turn of the eye, perhaps also in the modeling between the nostril and the angle of the mouth. The graceful head of PLATE XXXII., 4, has the lips well parted, with a clear indication of the teeth, yet

<sup>1</sup> Further account will be given of this when dealing with this metope separately.



it would be hard to fix upon any definite shade of emotion in it.<sup>1</sup> The same applies to the head of the warrior placed upon the torso of PLATE XXX. The turn of the eyes with their downward gaze in the head of the Amazon (PLATE XXXI., 3) would not help us far in appreciating an expression of pathos, if it were not for the actual downward and sideward droop of the head; for in the face itself there is but slight if any indication of emotion.

All this tells us simply that our sculptor still clung to the severer traditions of art maintained in the fifth century B. C., in which emotion was not yet freely expressed in the heads of Hellenic type, though the bodies rendered with perfect freedom every phase of life and action. To our knowledge the step towards more adequate expression of emotion in the heads was not made before the time of Scopas or towards the middle of the fourth century B. C.

If we compare these heads with each other we shall find, looking at them superficially, that they present a certain variety of type and that there are certain differences of detailed treatment. As regards the variety of type, we shall find that this may correspond to the variety of subject. For among the nine heads or fragments of heads three are heads of Greek youths, two of which have helmets (PLATES XXX.; XXXI., 1, 2, 4), and these are distinctly of the same type, while the others are female heads, one of an Amazon, another probably of a helmeted goddess (PLATES XXXI. 3; XXXII., XXXIII., 1, 2), another of a young girl, two others of maturer young women, and the last of a girl whose hair is being clutched. The difference is thus seen to be due to the difference of subject and action.

The same applies to the differences of detailed treatment: a head with a downward look is different in the treatment of the eyes from one with a straight or upward glance. So also as regards the position of the head as it follows the movement of the torso. Moreover, it must be remembered that all these heads, with one exception, were worked in relief, and were thus meant to be seen only from one point, be it in profile, full face, or three-quarter view; and that thus, among the comparatively small number of such heads (we roughly compute that there must have been in pediments and metopes at least 190 heads) which have come down to us, we are fortunate in having so large a number as three belonging to the same category.

There is thus a very slight divergence in the treatment of the eyes of one or two of these heads, and there is some difference and uncertainty in the treatment of the hair. If we compare the Parthenon metopes and frieze (unfortunately we have no head which we can assign to the pediments beyond all doubt) as regards the treatment of hair, we shall find fully as great a variety, — from a cap-like treatment to the finished modeling of locks and strands; so, also, in the pediments and metopes from the temple of Zeus at Olympia, even with regard to the heads coming from the same pediment. But it appears to me that in our marbles, and perhaps in those instances I have just quoted as well, the sculptor who has evolved a fixed style for the rendering of hair in monumental sculpture, in bronze or gold and ivory, may be still hesitating and searching for the proper manipulation in the rendering of such texture when he comes to marble sculpture which he uses in the decoration of great edifices. We must not forget that so far as the evidence, both literary and monumental, now at our disposal goes, we have no proof of the perfect working of marble in the minute indication of texture and all its inherent artistic qualities before the advent of Scopas and Praxiteles.

<sup>1</sup> The earliest instance of showing the teeth known to me is in the fallen giant from the metope of Selinus from the Third Temple, and in the fallen hero from the eastern pediment of the temple of Athena at Aegina.



In spite of this slight divergence, I confidently maintain that no one who is thoroughly familiar with a large series of heads in the different periods of Greek art, and has carefully observed and studied these sculptures from the Heraeum together, can fail to see that they definitely belong to the same school, and that they have in common marked characteristics which not only point to a common origin, but clearly distinguish them from the heads of other schools.<sup>1</sup>

To begin with, they all have the same structural frame, the same broad outline, the same formation of the skull. It can best be described as square and massive; and this applies to the profile as well as the full face. It is neither strongly oblong nor pear-shaped with a point at the chin on a triangular system, nor oval, nor round and ball-like.<sup>2</sup> The hair is in its main arrangement close fitting, not free and rich in its treatment as it rises from the head; but it seems almost slavishly to follow in its outline the main square shape of the skull. And this is so even in the case of the more profuse hair of the female heads. With the exception of the female head whose hair is grasped on the top, the hair, generally parted in the middle, is arranged in the same system of waves on either side of the central parting and covers the upper part of the ear. The forehead is thus left in a comparatively smooth arch-like curve. The brows are cut in the same simple arch with the same angle to the nose; both lids of the eyes are then cut in the same firm line with the same indication of the lacrimal gland. The nose is comparatively broad and thick, with a strong bridge slightly thickened in the middle and a broad rounded tip. The nostrils, too, though they do not project far in comparison to the breadth of the tip of the nose, are thick and well curved. The upper lip is well arched and clearly defined, in most cases slightly opened, giving something of a pouting expression to the mouth. Mr. Edward Robinson of the Boston Museum of Fine Arts has drawn my attention to a marked peculiarity in the treatment of the upper lip, which he has noticed in the heads hitherto ascribed to Polycleitus, and which is to be found in all these heads from the Heraeum. It consists in an upturning and widening out of the curves at either side of the central point, which accentuates the peculiar pouting expression. This expression is still more heightened by the hollow between the upper lip and the nose and the marked protrusion of the lower lip, with the short, deep hollow between it and the chin. There is thus a central mass of the lower lip, well defined in all these heads, which protrudes in its rounded curve, and this central protrusion is clearly divided from either side of the lower lip. From the curve under the lower lip the strong, rounded, but not over-long chin projects almost within a line of the foremost point of the lower lip. The cheeks present a broad, well-rounded surface, not approaching chubbiness, but, on the other hand, far from thin or tapering towards the chin. In the profile view the middle of the frontal bone above the nose, and the outer tip of the upper lip are about on the same line. The forehead, rising upward, inclines slightly inward, as, in a downward direction, the lower lip and chin slant inward. From this most prominent point of the frontal bone the nose projects outwards gradually. All these peculiarities these heads have in common.

<sup>1</sup> Since this was written I have endeavored to define the style of these heads in an attempt to identify the Argive Hera with a head in the British Museum.—*Journal of Hellenic Studies*, XXXI. (1901), pp. 30 ff.

<sup>2</sup> See the discussion on this point in my previous publication of one of these metope heads. *American Journal of Archaeology*, IX., 1895, p. 334 (*Papers of the American School at Athens*, VI. p. 252).



## THE PERIOD AND SCHOOL OF THE HERAEUM MARBLES.

We must now solve the question, To what period and to what school may we assign these sculptures?

The general characteristics of art manifested in these works, as well as the details of style and workmanship, point towards the fifth century B. C. But if we compare these metopes from the Heraeum with the metopes from the Parthenon, we shall at once assign to the former a later date than to the latter. They undoubtedly mark a greater elaboration, more detailed modeling, more accentuated finish in the nude and in the drapery than the most advanced of the Parthenon marbles. As an outside limit in the other direction, I should put the fragments from the Tegean temple and of the Scopasian School, which certainly manifest a later development in the rendering of individuality and of emotion in the treatment of the heads. In their manifest outside limits they must thus have been produced between the years B. C. 438 and 360.

Positively we may compare them with the Phigalian marbles from the temple of Apollo at Bassae. But these are coarser in workmanship and in sentiment. The heads are rounder, more bullet-shaped, the movement more exaggerated, especially in the restlessly fluttering drapery, in the stretched folds of drapery drawn into parallel lines by the knees bent apart — a feature characteristic of these sculptures. The Heraeum marbles have the greatest analogy among extant works, as regards the treatment of the body and of drapery, with the beautiful reliefs from the Balustrade of the temple of Niké Apteros at Athens, and with the reliefs and pedimental figures from the temple of Asclepius at Epidaurus. Yet a minute examination will show that there is greater elaborateness and sensuousness, as well as complexity, in the treatment of drapery in the Athenian reliefs from the Balustrade, which appear to me distinctly less severe and, in so far, later in character. The Epidaurian sculpture, again, has a very close affinity in style; but especially when we take the Acroteria (Nereids and Flying Victories), it shows greater softness in the indication of the female figure and greater complexity and heaviness in the treatment of drapery than we find in our works, which are in so far of an earlier period, i. e. earlier than about 380 B. C. The difference between the sculptures from these two Argolic sites corresponds very much to the difference which I have noted<sup>1</sup> with regard to the *sima* from the Heraeum (see above, p. 124) and that from the Tholos at Epidaurus. A careful comparative examination of the *simas* of various Greek temples will show that the Heraeum *sima* is later than that of the Parthenon, and that of the temple of Apollo at Bassae; while it is distinctly earlier than those of the Epidaurian building, the Mausoleum of Halicarnassus, the second temple of the Ephesian Artemis, and the temple at Priene. The closest approximation to it is found in the ornamentation of the Erechtheum of Athens, but this shows signs of being a slightly later development of the pattern which is given on the *sima* of the Heraeum.<sup>2</sup>

<sup>1</sup> See my *Excavations*, etc., pp. 15 and 16.

<sup>2</sup> It would be impossible to exaggerate the importance of a careful comparative study of such architectural details, which I feel confident will bear the most fruitful results, when viewed in the light of the whole history of Greek art. In the present instance, a careful tabulation, followed by a conscientious analysis of the honeysuckle pattern as given on *simas* and cornices, in connection with the treatment of the lion's head serving as water-spout, will furnish a safer chronological foothold than many elaborate treatises of

monuments and critical renderings of texts combined. I cannot in this instance develop the full import of such a comparison in all its details; but the mere outline of the comparison I made between these carvings in the buildings referred to in the text will illustrate my meaning. Compared with our *sima*, that of the Parthenon is simpler in design and line, while the lions' heads are less conventional. I do not mean by this that they have any of the realism which some belonging to later buildings (which often combine these elements of realism with more de-



As we shall see more clearly the further we proceed, there is every reason to accept a certain relationship between the Argive Heraeum and the Epidaurian works of art; only this relationship would mean that the Argive works influenced the construction of those at Epidaurus.<sup>1</sup> The younger Polycleitus, grandson of the great sculptor, was commissioned to produce the beautiful Tholos at Epidaurus, and from the proximity of the two places we might well expect an Argive influence there.<sup>2</sup>

As the architectural decorations have the clearest affinity with the Erechtheum of Athens, so the head of Hera has some points in common with the heads of the Caryatids from that temple. But as we shall see later, this resemblance, as far as it goes, makes it more likely that the type of head in the Caryatids was influenced by Argive art than that the reverse current of influence was in force in that period.<sup>3</sup>

All this internal evidence of the monuments themselves naturally leads us to fix the date of these sculptures, judging them merely from their style, in the second half of the fifth century B. C., later than the Parthenon and slightly earlier than the Erechtheum. And when, further, we have the definite statement that the temple was burned down in 423 B. C., and bear in mind that it must have been rebuilt at once, we are justified in assigning to these sculptures the date determined for the erection of the temple, that is 420 B. C. This date, moreover, is the one assigned by Pliny (*N. II. XXXIV. 49*) to Polycleitus, and has universally been admitted to refer to his making the statue of Hera for our temple. When, further, we remember that, at all events, the metopes had, for reasons of construction, to be put in their place before the building was completed, there can hardly be any further doubt respecting the date of these sculptures, a degree of certainty which is hardly equaled with regard to any other monuments that have come down to us from Ancient Hellas.<sup>4</sup>

veloped conventionalization in other features) have. The *sima* of the Phigalian temple is similar in arrangement to ours, but is on the whole harder and less developed. On the other hand, as I pointed out in the first publication in 1892, the Epidaurian *sima* is throughout more "barocco," a distinctly later development. In the Mausoleum of Halicarnassus, the lotos and honeysuckles alternating have a more conventional character, with a touch of Orientalism, while the lions' heads with the deeply sunk eyes are at once more realistic and yet have a more conventionalized pattern to the "whiskers." The lions' heads in the temple of Athene Polias at Priene are similar, but are generally coarsened in workmanship. Still further conventionalization is to be noted in the Nereid Monument from Xanthus, in which the lines about the jaw, etc., cover the whole nose and cheeks, and have become a mere decorative pattern. Perhaps earlier than these, the lions' heads from the Ephesian temple of Artemis confine these lines to a symmetrical arrangement up the nose; the eyeball is sunk in a deep-cut circular channel surrounding it, the two ridges on the forehead have become conventional channels. So, too, the beautiful scroll pattern on the *sima* is an advanced elaboration of that on ours with greater conventionalization. Each one of the volutes is elaborately grooved (where it is simple in ours) with foliage overlapping—blossom and twig are here confused and mingled with each other, as well as in the neck of columns. On the other hand, the patterns round the door and console of the Erechtheum are nearest to our own, only there is additional grooving in the twirling

stem of the scroll pattern; the whole is later and more conventional. The similarity is still more striking if we can assign the fragment with the bird to this building. But one thing seems to me clear: that the Erechtheum ornament and that from the *sima* of the Heraeum are most closely related, and that of the two the Erechtheum is slightly later and marks one step further in the natural history of ornament.

<sup>1</sup> According to the inscription published by Cavvadias (*Fouilles d'Epidaure*, I. p. 23), and Foucart (*Bull. de Corresp. Hellén. XIV.* [1890], pp. 589-594), the models for the pediments were furnished by the artist Timotheus for the sum of 900 drachmae, inferior artists being engaged under him. This famous artist Timotheus we can follow in his successful career for many years in the fourth century B. C. We know that he collaborated with Scopas, Bryaxis, and Leochares at the decoration of the Mausoleum of Halicarnassus, but there is nothing to show to what school he belonged, whether Attic or Argive.

<sup>2</sup> We cannot even say that Thrasymedes, who made the gold and ivory statue of Aesclepius in the Temple at Epidaurus, belonged to the Attic school. His former association with Phidias as his pupil rests merely upon the mistaken late statement of Athenagoras (177 A. D.) in his *Leg. pro Christ.* 14, p. 61.

<sup>3</sup> See below, p. 167.

<sup>4</sup> It might be said that the metopes were let in with rough marble projections to be worked in relief *in situ* at a later period,—there is absolutely no reason in favor of this very unlikely proceeding.



## POLYCLEITUS AND THE HERAEUM MARBLES.

The date of these works thus being fixed, the next question is that of the school to which we must ascribe them. We shall see more clearly, the further we proceed, that there is every reason, internal and circumstantial, for assigning them to the Polycleitan school, and no valid reason against this.

In the first place, we must naturally assign to the leading sculptor of the place, who is charged with the creation of the great temple statue, the superintendence, if not the designing and elaboration, of the sculptured ornamentation of this very temple. The probabilities in favor of these temple ornamentations being representative of the art of Polycleitus are as great as, if not greater than, the probability that the Parthenon marbles are representative of the art of Phidias. For while we know that Phidias had a powerful opposition against him in the Athenian state which tended to limit or to interrupt or even to stop completely his work at Athens, we know of no such disturbing elements which curtailed and limited the dominating influence of the leading Argive artist in his home. If the local Argive artists were of inferior talent, or even second to some other leading artist in Hellas, we could understand why part of the great work should be assigned to a foreigner. But we find that at the time of the construction of the Heraeum, Polycleitus was *facile princeps*, that he stood unrivaled among the artists of the whole of Greece, and that he was at the head of a most flourishing school of sculpture, which for generations after, when this school passed on to Sicyon, made its influence felt upon all succeeding artists, so that even a Lysippus in the following century acknowledges this direct influence. When we consider these general facts, there is at least no *a priori* reason for assuming the advent of foreign sculptors to decorate the temple for which Polycleitus fashioned his famous statue of Hera.

I have just emphasized the unique position held by Polycleitus after the death of Phidias. But as a matter of fact, the prominent position of the Argive sculptor did not depend merely upon the absence of his great Athenian rival, the greatest of ancient sculptors. For subsequent generations, who had the works of all the great masters before them, assigned to Polycleitus a place which (though in our eyes it does not detract from the supreme genius of Phidias) secures for him the same general plane of excellence from which Phidias rose above his younger contemporary. We may ignore for the moment the passages containing the exalted praise of his great statue of Hera, as well as those concerning his peculiar artistic qualities, with which we shall deal later, and we still find that the representative judges of the ancient world couple his name with that of Phidias when they mention the greatest artists of antiquity; just as in modern music — and the analogy is tempting in many other respects — Mozart is coupled with Beethoven. Xenophon,<sup>1</sup> in speaking of the greatest artists, selects Homer to represent the epos, Melanippides the dithyramb, Sophocles tragedy, Zeuxis painting, and Polycleitus sculpture. Aristotle<sup>2</sup> and Dionysius of Halicarnassus<sup>3</sup> single out Phidias and Polycleitus, the latter placing Polycleitus first. Cicero chooses him by preference to illustrate the highest sculpture, and says of his works,<sup>4</sup> "They are more beautiful and, in fact, quite preferred." Quintilian, Statius, Juvenal, Lucian, and Aelian all adopt the same tone. Finally Pliny,<sup>5</sup> speaking of bronze work, says that Polycleitus developed this art to the highest point, and carried to perfection what Phidias had opened out.

<sup>1</sup> *Memorabilia*, I. 4. 3.

<sup>2</sup> *Eth. Nicom.* VI. 7.

<sup>3</sup> *De Dinarcho*, 7, and *De Isocrate*, 13, p. 541.

<sup>4</sup> *Brut.* 18. 70.

<sup>5</sup> *N. H.* XXXIV. 56.



Is it at all likely that the Argives who kept up the tradition of the Polycleitan school, of which they must have been proud, and allowed the grandson of Polycleitus, Naucydes, to make the statue of Hebe to stand beside Hera, is it likely, with this giant artist in their midst, with a thriving school (in which were his own sons and grandsons) spreading its ramifications to other great art centres in Greece, that they would have turned to other parts, even to Athens, for sculptors to decorate their great temple? And at what period would they be doing this?

This was a time when Phidias was dead, and with him Pericles, and a strong wave of Attic opposition was likely to counteract the vitality of the school of Phidias; when the Peloponnesian War was exhausting the wealth and checking the artistic advance of that centre of Greek taste; when, as a matter of fact, so far as undoubted evidence is concerned, we have a lacuna as regards great sculpture in Attica. At this very time the genius of Polycleitus and the vitality of his school reach their highest point. As Furtwängler puts it: <sup>1</sup> "The rise of Polycleitus in Argos marked no less an epoch than that of Phidias in Athens; the Doryphorus is as decided an advance on its predecessor as the Lemnia and the Parthenos on theirs."

Is it not more likely even that Argive artists of the Polycleitan school would be called to Athens than that Argives would call in inferior Attic artists, the two states being allies at the time? Are we not even more justified in expecting to find at this period the artistic influence of Argive sculpture at Athens than post-Phidian influence at Argos,<sup>2</sup> especially when we remember that such influence had become traditional from the time of Ageladas, that at an earlier period Polycleitus had vanquished Phidias with his statue of an Amazon, and that, in the Attic talk of even the period when Phidias was alive, the names of the two artists were familiarly coupled together, as is shown in Plato's *Protagoras*?<sup>3</sup> If, moreover, as I hope to be able to do, I can establish the identity of pattern on the diadem of the Hera from the Argive coin (admitted to be a reproduction of the famous Polycleitan statue) and on our *sima* from the temple in a most individual feature, I shall have gone far to show, by actually extant works, an immediate relation between the maker of the great statue, Polycleitus, and the marble-workers of the temple — *a fortiori* of the sculptors who carved the metopes and pediments.

When now we find that among the marbles from the metopes of this temple we have a head which is unmistakably Polycleitan, closely related to the head of the Doryphorus and to other heads rightly assigned to Polycleitus,<sup>4</sup> that the second of our six extant heads

<sup>1</sup> *Masterpieces of Greek Sculpture*, translated by Eugénie Sellers, 1895, p. 226.

<sup>2</sup> I shall have to point out, for instance, how the weight of probability goes to show that the Erechtheum Caryatid-type was influenced by a famous statue of Polycleitus.

<sup>3</sup> Of this passage (311 c) Furtwängler says (p. 225): "Plato is evidently citing the two most celebrated artists and leaders of the two schools most in renown at the time in which the dialogue is supposed to have taken place."

<sup>4</sup> Any intelligent comparison of our Argive head with that of the Doryphorus and the replicas of this statue will at once demonstrate this. The difference between the two in the treatment of the hair is on the one hand to be ascribed to the difference of the development in the treatment of hair in Polycleitan works from the Doryphorus to the Diadumenus, as well as to the difference of bronze and marble technique, — especially when we remember that our head formed part of a metope placed high up in

a building and not of a statue on the eye-line. For this variation in the treatment of hair, as well as for its similarity to Polycleitan work, I would also ask for a comparison of our head with that in the possession of Sir Edgar Vincent (Furtwängler, fig. 103) and of the head in the Hermitage of St. Petersburg (*ibid.* fig. 104), which Furtwängler considers to be the best copy of an athlete by Polycleitus. He says of the hair: "The hair, though individual enough, is not worked with much detail. The style is distinctly Polycleitan; this is still more the case in a copy of the head in the Hermitage." I would further ask for a careful comparison between our head and that of the beautiful statue of a boy in Dresden as given by Furtwängler (*ibid.* fig. 112). It will then be seen how in the profile view the general arrangement of the hair round the ear and at the back of the head, though roughly blocked out in the metope head and carefully elaborated in the boy's statue, is essentially the same.



from these metopes, that of the Amazon, shows close relationship to the type of an Amazon head hitherto identified with Polycleitus, on what ground can we reasonably assign these sculptures from the Heraeum to any other school than to that of Polycleitus of Argos? I firmly maintain that we cannot.

Still this has been done. Furtwängler has rather hastily said (although he acknowledges, in a footnote, that he had not seen our finds):<sup>1</sup> "All these sculptures have not the least relation to Polycleitus and his school. . . . The head of Hera, as well as most of those pieces of sculpture from that place [Heraeum] known to me are certainly Attic."

I had intended to pass over this positive statement, together with other remarks by the same author, without further attention, believing that their somewhat dogmatic tone, as well as the inadequate and superficial habit and method of scientific observation of which they seem to give evidence, would prevent their having an influence on the thoughtful reader. But I find that he has repeated his assertions in the *Meisterwerke*,<sup>2</sup> a book that is widely read and contains much of extreme interest and value, although this is closely connected with some rather precipitate and apparently unwarranted views, which are unfortunately so expressed as to give the impression of being firmly established facts. As this work is widely known and often quoted, I feel that it would not be dealing justly by the treasures which a good fortune has put into our hands, if we were to allow their proper scientific appreciation to be perverted or even retarded.<sup>3</sup> I must therefore attempt a refutation of Professor Furtwängler's doubts as well as of his assertions, which will at the same time lead to a more detailed appreciation of the light which our discoveries throw upon Polycleitan art.

It is difficult to account for such opinions as those expressed by Professor Furtwängler, or to find adequate reasons for them. In studying his *Meisterwerke*, however, to learn the grounds upon which he rests his own conviction or opinion, I find that these views rest upon a general theory developed in an earlier portion of the book, into which he is naturally led to fit other facts as they arise. This general theory is that of the widespread influence of the artist Cresilas. On p. 243 of his *Meisterwerke* he says: "We may assume a certain amount of Attic influence in the later period of Polycleitus, and for this Cresilas may well have been the medium; for we know that he was working at Argos just at this time. And we must bear in mind that, as I have previously shown, the fragments of sculpture from the Heraeum of Argos are worked in a style in which Attic influence preponderated, and are decidedly akin to the figures on the Niké Balus-

<sup>1</sup> *Archaeologische Studien* Heinrich Brunn Dargebracht, April, 1893, pp. 89, 90.

<sup>2</sup> *Meisterwerke*, p. 223.

<sup>3</sup> I feel this the more, because of course the work which Professor Furtwängler has done entitles him to a very prominent position among archaeologists. If he seems to me to be lacking in the power of delicate artistic appreciation and to be overhasty in judging the relative value of evidence and the relative degrees of certainty, his apprehension of mechanical decorative detail and his memory for these important matters are astounding; not so, I believe, his appreciation of pure sculpture on the artistic side. Still, I fully recognize that his stupendous productivity, his intimate acquaintance with monuments and literature, assimilated into a phenomenal memory, together with an excellent perception and mastery of decorative forms and technical details in art,

have enabled Professor Furtwängler to produce fundamental and enduring work such as we have in his great monographs on vases, gems, bronzes, and in the intelligent cataloguing of great collections. It is true Professor Furtwängler's view has, so far as I know, not been accepted by any authority. Collignon (*Hist. de la Sculpt. Grec.* 1897, p. 168) says: "M. Furtwängler la considère comme une oeuvre attique. Mais je crois que M. Waldstein a raison d'y voir une oeuvre de style Argien." Overbeck refers to the head in similar terms. E. A. Gardner (*Handbook of Gr. Sculp.* II. p. 341), while admitting the Argive origin of the Hera head, hesitates, and assumes an Attic influence, to be ascribed to the fact that Argive artists had come under the influence of Phidias. Tarbell hesitates in a similar manner (*Hist. of Greek Art*, pp. 211, 212).



trade at Athens, all of which seems to point to the probability that Attic artists were at work in Argos." In a footnote he adds: "The head lately found at the Heraeum which Waldstein considered to be Polycleitan is more likely Attic."

Now this Cresilas is the point upon which rests Professor Furtwängler's assertion of the transportation of Attic art into Argos. All we know of this artist with certainty is that he was not an Athenian, but a Cydonian, and that he most probably emigrated from his Cretan home into Greece. He certainly made a portrait of Pericles which is inscribed with his name,<sup>1</sup> the inscription having come down to us. A second inscription found on the Acropolis was dedicated by a certain Hermolycus, and dates back to about the middle of the fifth century.<sup>2</sup> A third, found in the same place,<sup>3</sup> is considerably later. A fourth inscription is on the base of an offering to Demeter Chthonia at Hermione<sup>4</sup> in Argolis. A companion inscription dedicated by the same man, Alexias's son, gives the name of an Argive artist.<sup>5</sup> To this Furtwängler adds: "Cresilas is thus shown engaged on work for a family of Hermione in company with an Argive artist; and the probability is that he was living at Argos at the time, and received the commission jointly with the native artist." In the last two inscriptions Cresilas calls himself a Cydonian. Upon these facts Professor Furtwängler builds up the life of this artist (p. 116): "Even from this view itself we can gather a good deal of information concerning the artist's life. Born at Cydonia in Crete, he must have left home early in order to cultivate his talents, for we know of no school of artists in Crete at that time. . . . It was of course only natural that the young artist should turn his steps to the brilliant and artistic Athens. Here he seems to have succeeded in working his way up among the first artists and in obtaining a great reputation, especially as a portrait sculptor. Otherwise he would certainly not have been intrusted with the bust of Pericles, the most distinguished and most powerful man in the city. . . . As to the migration of Cresilas to Argos, it was doubtless occasioned by the outbreak of the Peloponnesian War, which must have rendered residence in Athens unpleasant for an artist, especially if he was a foreigner," etc. Now it is this Cydonian artist who, Furtwängler maintains, brings Attic sculpture to Argos in the time of Polycleitus.

If we were so inclined, I believe we could more readily make a theory that this Cresilas, who worked jointly with an Argive artist, who was beaten by Polycleitus in the competition for the Amazon statue, who, as it were in imitation of the great artist, makes an Amazon and a Doryphorus, migrated from his Cretan home to Argos, and might thus be considered an Argive artist rather than an Athenian artist. But we should consider such an attempt frivolous.

There are other more definite grounds upon which Furtwängler bases his assertion that our Argive sculptures are Attic in style. These are to be found in a comparison he establishes<sup>6</sup> between our life-size head of Hera and a small marble head of a boy (83 mm. in height) which came from Brauron, and which, I am told, is in his private possession (Fig. 84). To this head he assigns the date of *circa* B. C. 420. On a former occasion<sup>7</sup> Professor Furtwängler brought this little head into direct relation with the Olympian sculptures, and pointed to the similar treatment of the hair in the old man of the eastern pediment and the treatment of the eyes in Olympian pedimental heads.<sup>8</sup> These state-

<sup>1</sup> Δελτιον Ἀρχαιολ. 1889, p. 36.

<sup>2</sup> Loewy, *Inscr. G. Bildh.* No. 46.

<sup>3</sup> Loewy, *ibid.* No. 47.

<sup>4</sup> Loewy, *ibid.* No. 45.

<sup>5</sup> Loewy, *ibid.* No. 51.

<sup>6</sup> *Archaeologische Studien*, etc. p. 89, pl. iii.

<sup>7</sup> *Athen. Mittheil.* V. (1880), p. 45.

<sup>8</sup> "Die Haare sind behandelt wie z. B. an dem alten



ments he now retracts, and maintains that "the nearest parallel to my small 'Attic' head is the newly discovered beautiful head from the Heraeum of Argos, belonging to the same date. This head is that of a girl who, however, like our boy, *has a braid at the parting in front* [the italics are all mine]; behind the band, however, this braid is not continued. One of the *Korai* of the Erechtheum, also of the same date, has quite a



FIG. 84. — SMALL MARBLE HEAD FROM BRAURON.  
In the possession of Professor Furtwängler.

similar braid at the parting. *Also the strongly waving hair is analogous in the heads compared.* With the head from the Heraeum our small head is furthermore *speciall connected through the cut of the eyes, the formation of the eyelids, and the lacrimal glands* (Thränenkarunkel), *furthermore through the supreme sweetness of the mouth and the flat dimple of the chin.*"<sup>1</sup> For every point of similarity which is here supposed to establish a direct connection between these two heads we might almost put contrast or marked difference, and I would ask the reader to compare the cuts here given with our PLATES (FRONTISPIECE and XXXVI.).

1. The general build and outline are quite different. The upper part of the Brauron head, when taken in full face, is broader throughout, and maintains this breadth across the cheek. It thus follows a round, and not a square or rectangular principle. In the profile view, the top of the head rises more from front to back; its highest point is not in the middle, but more towards the back; while the whole outline of the face, with the receding forehead and the receding lower lip, the comparatively great breadth and flatter surface of the cheek between nostril and ear, give to this head a remarkably different character from that of our Hera.

2. The "strongly-waving" hair is dealt with in so peculiarly delicate and almost washed-out a manner that it stands in strong contrast to the well-cut waves of hair in the Hera, as well as in the Caryatids from the Erechtheum. It is no doubt this peculiar quality of long, roundly cut waves which led Furtwängler to make the comparison (justified in this point) between his head and some of those from Olympia. A further comparison of the Brauronian head and its hair with that of the youthful Triptolemus from the famous

Manne vom Ostgiebel; die Augen ferner und das etwas hervortretende Untergesicht sind widerum jenen Sculpturen direct verwandt." Would he thus also consider our Hera *direct verwandt* with the pedimental heads from Olympia as regards eyes and the lower face?



<sup>1</sup> "Seine nächste Parallele ist der neugefundene eben um diese Zeit [B. C. 420] datierbare schöne Kopf vom Heraion bei Argos. Dieser stellt ein junges Mädchen dar, das aber wie unser Knabe vorne auf dem Scheitel

einen Zopf hat; hinter der Binde setzt sich dieser indess nicht fort. Einen ganz gleichartigen Scheitelzopf hat eine der Korai des Erechtheions, die um dieselbe Zeit zu datieren sind. Auch die stark wellige Behandlung der Haare ist an den verglichenen Skulpturen analog. Mit dem Kopf vom Heraion ist der unsrige noch besonders durch den Schnitt der Augen, die Bildung der Lider und der Thränenkarunkel, ferner durch den überaus lieblichen Mund und das flache Kinngrübchen verbunden."



Eleusinian relief might be instructive and profitable. But in modeling there is no analogy to the hair of our Argive head.

3. The outline of the receding, more wavy forehead in the Brauronian head, with its straight line about the braid, differs essentially from the simple circular sweep of forehead in the Hera.

4. And as for the "cut of the eyes, the formation of the eyelids, and the lacrimal glands," they are distinctly different. The orb of the eye itself is flatter and more almond-shaped in the Brauronian head. This is especially due to the different treatment of the upper lid. In the Brauronian head the curve is very slight and flat,  while in ours it has a bold circular sweep . This alters, not only the whole aspect of the lid, but the whole expression of the eye and face, which becomes more dreamy in the Brauronian head. The "Thränenkarunkel" is larger and more prominent in the Argive head.

5. The "supremely sweet" mouth, besides being closed in the Brauronian head, is much smaller, the projecting upper lip having more of an arch-like curve; while the lower lip has not the characteristic narrowly defined thickening which is so notable a feature in all these Argive heads.

The one point of similarity between the two heads is the "braid," which runs from the forehead to the back of the Brauronian head, and is not continued behind the band in ours. No doubt it was this vague and trifling similarity of one detail which led Professor Furtwängler to make what I must call superficial observation and to draw such a hasty conclusion. The analogy in this arrangement of the hair is much closer between our head and the maiden from the Erechtheum; and no doubt this obvious similarity again has led others to observe an Attic character in the Argive head. But though this peculiar arrangement of the hair is the same, the Caryatid, with the long curls on either side, shows a more mechanical and wooden treatment in this central braid, coming straight to the forehead, while in ours the waves of hair part symmetrically and yet organically beneath and beside it. It looks almost as if the sculptor of the Caryatid (Fig. 85) had not fully understood the natural arrangement as given in our head. In spite of the similarity of arrangement between these heads, a glance at the rounded forms in forehead and cheeks, the more fleshy treatment of the Attic work, compared with the spare, sharply cut outline of our Argive work, will well illustrate the difference of style in spite of the similarities.

If there be any connection between these two works as regards the type or subject represented, is it not more rational, in view of the general state of sculpture in that period, to which we have referred above, to assume a Polyceitan influence in Athens, rather than a dependence of Argive sculpture upon Attica? And does not this become still more pressing in this definite case, when we find that world-famous works by Polyceitus were two Canephorae holding a sacred vessel on their heads "according to Attic custom"?



FIG. 85. — HEAD OF ONE OF THE KORAI FROM THE ERECHTHEUM.



Cicero<sup>1</sup> praises them for their supreme grace (*eximia venustate*), while Symmachus<sup>2</sup> mentions them, together with the Zeus of Phidias and the famous cow of Myron, as the most famous works of art in existence. If Polycleitus, whose fame was established long before the Erechtheum was built, created a type of maiden carrying some object on her head, a work of world-wide fame, is it not more likely that the inferior Attic sculptor who fashioned these maidens for the Erechtheum should be influenced by such a type than that the Argive sculptor should borrow his type from the later Erechtheum?

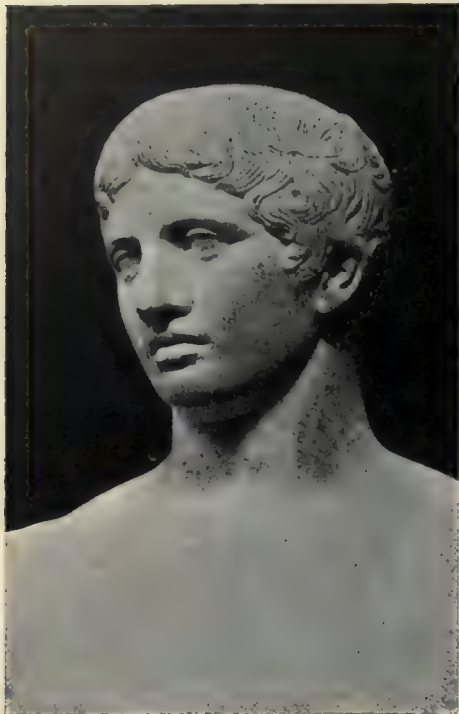


FIG. 86.—HEAD OF THE DORYPHORUS.  
Ancient marble copy of the statue now in the  
Museum of Naples.

If there was such Polycleitan influence in Attic works of the second half of the fifth century, there might certainly also have been, and there most probably was, a certain Attic influence in Argive work. Even so great an artist as Polycleitus could not fail to be affected by the technical advance made by Phidias and the great sweep of his artistic genius. We can thus trace the influence of the technical progress made by the Van Eycks in oil-painting through Antonello da Messina in nearly all the great Italian masters; the artistic spirit of a Dürer even is modified by his travels in Italy; even a Giorgione and a Titian are not to be wholly explained by the specifically Venetian current of artistic growth; Raphael is affected by Michael Angelo; Francia, even at an advanced age, by Raphael; Mabuse the Fleming by Italian art; Rubens expands his genius after his stay in Italy and Spain; so Van Dyck and so many others. But these alien influences do not extirpate or hide the strong original and native "style" if it ever was

the direct expression of a marked and vital artistic personality.

So, too, while recognizing the strongly surviving "Doryphorus" element in the youths' heads from our metopes, we see certain changes from the severer bronze technique as manifested in the head of the Polycleitan Doryphorus (Fig. 86), especially in the treatment of the hair. This is no doubt due, in the first instance, to the change in material, and consequently in technique, from bronze to marble. Polycleitus, moreover, was chiefly noted as a bronze-worker, while Phidias (though his chief works are *caelaturae*) was more proficient in actual carving.<sup>3</sup> But this must never lead us to believe that the great sculptor and his thriving school were restricted in their work to the one material, bronze, and could not extend their activity to the plastic decoration of the great temple in which they were working, especially when we know that his Zeus

<sup>1</sup> Cicero, *In Verr.* IV. 3. 5. Erant aenea praeterea [in the collection of Heius] duo signa, non maxima, verum eximia venustate, virginali habitu atque vestitu, quae manibus sublatis sacra quaedam more Atheniensium virginum reposita in capitibus sustinebant, canephorae ipsae vocabantur. Sed earum artificem? Quemnam? Recte admones, Polycleitum esse dicebant.

<sup>2</sup> Symmachus, *Epist.* I. 23: Tune, inquires, audeas de

philosophis iudicare? Licet alienas spectare virtutes: nam et Phidiae Olympium Iovem et Myronis buculum et Polycleiti canephoras rudis ejus artis hominum pars magna mirata est.

<sup>3</sup> Dionys. Halicarn. *de Dinarcho* 7: . . . καὶ πλάσται τὰ Πολυκλείτου καὶ γλυφεῖς τὰ Φειδίου.

Aristot. *Eth. Nicom.* VI. 7.: . . . οἷον Φειδίαν λιθοργὸν σοφὸν καὶ Πολύκλειτον ἀνδριαντοποιόν.



Meilichius<sup>1</sup> was a marble statue. No actual marble statue is ascribed to Phidias. Moreover, his very excellence as a *πλάστης*, as a modeler, would make Polycleitus best fitted to make the wax or plastic models, *τύποι*, for the architectural compositions such as the Epidaurian inscriptions tell us were made by Theotimus for that neighboring temple, the figures to be carried out in marble by his colleagues and pupils.

Furthermore, these deviations from the treatment of hair in the Doryphorus type are to be ascribed to the peculiar constructive purpose which these heads, as metope heads, served in the architectural scheme of the temple. Small heads seen at such a height in the building by the spectator below could not receive the same delicate, almost engraved, work in the modeling of the hair as is given to the Doryphorus heads seen on the eye-line; and thus they required the bolder and more massive subdivision of locks, which is found in ours. We know from the study of the Parthenon marbles how carefully these conditions of distance, lighting, and peculiar position of the works in their relation to the spectator were considered by the sculptor.<sup>2</sup>

Finally, we must not forget the natural development and advance of the sculptor himself in his acquisition of greater breadth and freedom. On this point I have been ably anticipated by Professor Furtwängler,<sup>3</sup> who, in discussing the development of Polycleitan art, arrives at a conclusion which I had reached independently, and which our finds strikingly confirm; namely, that we can distinguish an earlier, severer, and a later, freer style in the master's work on his Doryphorus and on his Diadumenus. This is clearly noticeable when we compare the heads of these two statues with each other and then perceive the advance in modeling and general freedom of composition and execution in the Diadumenus (Fig. 87).<sup>4</sup>

With a very slight turn to the side, the head of the Doryphorus is placed almost upright and at right angles to the chest in the simple and severe manner of earlier art. Now, a marked feature is the "build of the skull" (*Schädelbau*), which is square in its outline. The hair is laid over the square structure at an even height, never projecting strongly so as to interfere with the marked suggestion of the construction of

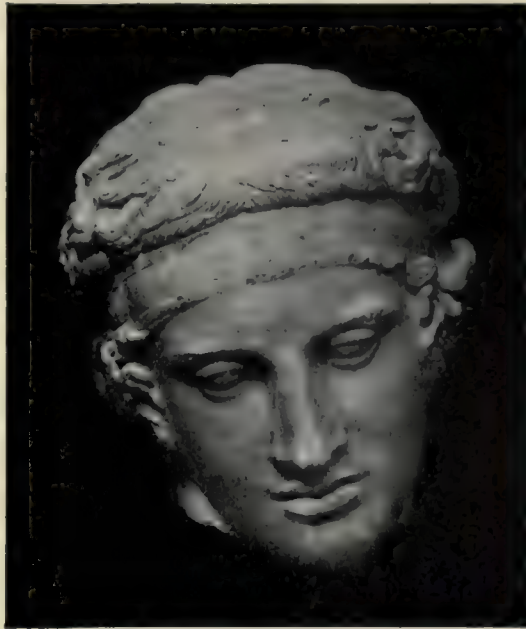


FIG. 87. — HEAD OF THE DIADUMENUS.  
Ancient marble copy, now in Dresden.

<sup>1</sup> Pausan. II. 20. 1: Διὸς Μειλίκιου, λίθου λευκοῦ, Πολυκλείτου δὲ ἔργον. This work is ascribed by some to the younger Polycleitus.

<sup>2</sup> See Waldstein, *Essays on the Art of Phidias*, p. 79, note 1; pp. 201 ff.; note D, pp. 227 ff.

<sup>3</sup> *Masterpieces*, pp. 243 ff.

<sup>4</sup> Before our finds at the Heraeum led me to reconsider carefully the extant monuments and records concerning Polycleitus, I was wont to explain the difference of phraseology applied to the two works by Pliny (*N. H.* XXXIV. 55), *fecit molliter juvenem*, for the Diadumenus, and *viriliter puerum*, for the Doryphorus, as devoid of any purpose of special characterization or distinction between

the two works, but simply as arising out of a literary desire of the author to give variety of style. Pliny, or the writer from whom he copied, I thought, desired to avoid the repetition of the same phrase, and thus chose terms which in a different form expressed the same fact. The technical distinction in ancient Greece marked by the ephebic age was conveyed by the technical meaning of *juvenis* and *puer*; and thus the *molliter* drew down the *juvenis*, as the *viriliter* drew up the *puer* to the same point of age between youth and manhood. Though such a literary desire may still have been active, I now think that the two terms do qualify and actually distinguish the two different works.



the skull, and is then worked in graceful variety in the locks, engraved into this uniform mass rather than modeled upon or chiseled out of it. All is kept in restraint and reserve by a prevailing sense of symmetry, which, with all the variety of line in the hair, giving freedom and vitality and removing any suggestion of archaic conventionality, still casts a touch of severity over the life and vigor of this art. In nearly all Polycleitan heads this symmetry manifests itself in a characteristic manner in the treatment of the locks in the middle of the forehead, where they form a distinct archer's bow. So the Doryphorus.

If now we turn to the Diadumenus, we find a marked advance. This is found especially in the head, but also in the bodies of the numerous replicas<sup>1</sup> of this once famous statue, which were valued at the high price of one hundred talents in ancient days.

As regards the body, there can be no doubt that these copies of the Diadumenus present in general build and construction, as well as in attitude, the same type as that of the Doryphorus. But the treatment of the surface, the indication of muscles and articulation, the delicate transitions are more advanced,<sup>2</sup> and herein they approach more nearly to the modeling of the torso from our metopes. This is still more the case with the beautiful small terra-cotta figure now in the possession of Mr. C. Blacker in London,<sup>3</sup> though we dare not attach too much importance to statuettes for comparison with life-size figures as regards details. Of course the greater elaboration and greater delicacy and naturalness of modeling may in these copies be due to the relative skill of the copyist; but especially in view of the changes in the head and the modeling of the hair, the variations in the modeling of the body are more likely to be due to the difference in the bronze original.

The heads again are practically the same in general structure and form. The marked shape of the skull is the same, though with the different treatment of the hair the superficial appearance of the outline may be somewhat altered. The features, nose, mouth, eyes, cheeks, and chin, are of the same characteristic, somewhat heavy quality. On the other hand, as in the body, greater delicacy, more sentiment, are given by the changed position of the head, which, compared with the almost upright and straight position of the head in the Doryphorus, is here more turned to the side and drooping, though far from the more sentimental attitudes observed in fourth-century works.

But the great change takes place in the hair. No doubt the advance marked in the modeling of the hair is amply explained by the progress made in the art of modeling by the artist himself, with his practice and experience, as well as the observation of the work of other masters, within a period of, say, twenty-five years. But the first real cause in the change is to be found, as I have so frequently pointed out in other spheres of Greek art, simply in the constructive conditions of the work, in the peculiar and indi-

<sup>1</sup> Besides the Vaison statue, so frequently reproduced, replicas of the Diadumenus have been published by: Michaelis, *Annali del' Inst. Arch.* Rome, 1878, pp. 1, seq., *Monumenti*, pl. x.; E. Petersen, *Bullet. della Comm. Arch. Comunale*, Rome, 1890, pp. 185 ff.; Furtwängler, *Masterpieces*, etc., pp. 238 ff., where the previous and other replicas are considered. Since Furtwängler's publication, the following replicas have been published: Murray, *Revue Archéol.* XXVII. (1895), pp. 143 ff. pls. xi., xii., a head in the British Museum; Couve, *Monuments et Mémoires*, 1895, vol. III. pls. xii. and xiii.; the beautifully preserved copy found in a house at Delos by the French, a better reproduction of the Madrid statue, with body and

head; Paris, *Monum. et Mém.*, 1897, vol. IV. p. 62, pls. i., ii.; *Bullet. de Corresp. Hellén.* 1895. Another, perhaps the most interesting of all replicas of the head, I saw two or three years ago in the possession of a dealer in Athens, but cannot trace it to-day. (See *infra*, p. 171, note 1.)

<sup>2</sup> Cf. Furtwängler, *Masterpieces*, p. 242; Couve, *l. c.*

<sup>3</sup> A. S. Murray, *Journal of Hellen. Stud.*, 1885, pl. 61. The body of this statuette shows greater slimness and delicacy than the other replicas,—though the Madrid copy is an advance in this respect upon the copy from Delos, and still more upon that at Vaison,—and is thus nearer to the torso from our metopes. But too much importance must not be given to so small a replica.



vidual subject dealt with. In this case it means that the Doryphorus had no *taenia* or band wound tightly round his head and hair; while in the Diadumenus this forms the central and most important part of the action or situation depicted. Thus in the Doryphorus the artist could naturally maintain with greater strictness his characteristic insistence upon the square shape of the skull, even while skillfully indicating the texture of hair in his delicate *ciselé* modeling of each lock. He could also continue his severer, traditional system of bronze modeling of hair by means of careful engraved work, in contradistinction to bold modeling of masses, — a feature which was handed on from the bronze technique which prevailed in the archaic period. But when once the tying of a broad band round the head became, not merely a casual accessory, but the central function in the statue he fashioned, the effect of such a tight band drawn over the pliant texture of hair had to arrest his attention and call forth his artistic skill in modeling, now concentrated upon the changed character of the hair. The square outline of the skull could no longer be so rigidly preserved, and the even, cap-like treatment of the whole mass of hair, with its delicate surface-modeling and engraving, had to make way for a much freer and radically different treatment. This hair had to rise out at the edge of the tight band flatly compressing the locks under it to the skull, in higher relief; locks were disturbed in the regular arrangement; one stood out higher than the other; the direction of its curve was altered, and some had to project over the band.

This is exactly the change which takes place in the hair of the Diadumenus. While maintaining in some points its relationship, its "consanguinity," to the hair of the Doryphorus, it rises out boldly over the fillet in a large plastic mass of locks, and escapes beneath it. It produces a varied tangle of locks projecting beneath it at the back of the ear, as well as above and in front of the ear over the temples — in fact, over the eye. Now these changes are essentially the same in all the best replicas, the Dresden, the Cassel, the Madrid, the Delos — in fact, all Diadumenus heads.

Though the artist followed this "constructive" impulse, dictated by the subject he dealt with, the vigor and freshness of this new modeling of hair, when once he had mastered it, mark an advance over the restrained and severe methods guiding him when he made the Doryphorus, which is so pronounced that our appreciation of the art of Polycleitus, as based upon the one head, must be essentially modified when we include the other. Yet the various fine replicas differ from one another in the actual elaboration of this same general system, — especially in the manner in which the copyist was able to reproduce, not so much the freely modeled, almost undercut, masses of projecting locks, as in the manner of transferring to marble the peculiar crisp and firm finish of the bronze locks in the original and the survival of careful "engraved" work in the indication of texture on the surface of each lock.

In this respect I should place highest the head in the British Museum and the one I saw at Athens, as I can clearly remember this characteristic treatment.<sup>1</sup> The bronze treatment of the locks must here be much nearer the original than is the case in any of the other replicas. Mr. A. S. Murray recognizes that *la présence des caractères qui rappellent la sculpture en bronze paraît attester la fidélité de la réplique*.<sup>2</sup> There is

<sup>1</sup> I have thought it right to leave the text of my manuscript standing as I wrote it, and to add this footnote just as we are going to press, for it appears to me a striking confirmation of the facts I here enumerate that I should have heard by accident, within the last few days, that the

head now in the British Museum and the one I saw at Athens are — the same head.

<sup>2</sup> *Revue Archéolog.* XXVII. (1895), p. 143. Recognizing this truthfulness of the copy in its relation to the original, Mr. Murray proceeds: "Mais ces caractères

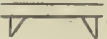


another curious feature in the British Museum copy which I distinctly remember in the head I saw at Athens; namely, a slight puffiness, or rise of the skin in the infra-ocular

mêmes ne seraient-ils pas dus à une certaine affectation ? Un tel luxe de fantaisie dans les détails ne dépasse-t-il pas même la portée de l'éloge de Quintilien, *diligentia ac decor* ? A mes yeux, la difficulté se présente dans les termes suivants. L'exubérance, la liberté et la beauté des cheveux sont, d'une part, en si parfaite harmonie avec le visage, qu'elles impliquent une conception non altérée ; d'autre part je ne puis trouver de preuve, même chez Quintilien, que Polyclète ait atteint, dans le traitement des détails, cette singulière richesse de fantaisie, au lieu de la large simplicité que l'on attendrait de son style et de son temps. En somme je considère comme certain que la nouvelle tête appartient à une période très postérieure à Polyclète ; cela est suffisamment attesté rien que par le traitement de l'oreille droite et de la boucle de cheveux devant l'oreille. Ces détails présentent tous les caractères de l'art grec postérieure au V<sup>e</sup> siècle." I can sympathize with Mr. Murray's difficulty, the more so as (vid. *infra*) I formerly held the same general conception of the art of Polycleitus, based upon the insufficient monumental evidence formerly at our command, and the consequent incomplete appreciation of all the passages in ancient authors relating to that sculptor. If Mr. Murray feels that the head contains a too careful elaboration of details in the hair, why should he stop short at the well-known passage from Quintilian concerning *diligentia ac decor* ? Why not, for instance, take note of what Cicero (*de Orat.* II. 16. 70) says of the rendering of the lion-skin and of the hydra, or what Plutarch (*de Profectib. in Virt.* 17) lets Polycleitus himself say concerning the complete finish of modeling, — and then reconsider what Quintilian means by *diligentia ac decor* ? His difficulty is that, on the one hand, he is forced to admit that the careful and free working of the hair is of a piece with the whole, and is therefore to be traced back to the original (though something, however little, will have to be ascribed to the transference from bronze to marble by a later copyist), while, on the other hand, there is for him too much delicate detail work for the severe Polycleitus and his age. Now, if the artist of the Doryphorus normally advanced from the stage marked by his earlier work, and, owing to this natural progress and to special reasons in the making of a youth binding a fillet round his head, advanced in the freer rendering of the texture of hair, would he not abandon the flat relief work as well as the severer symmetry ? Would not this treatment of hair with its careful, crisp modeling of single locks be the natural result ? So much for the style of Polycleitus. And as to "his age," I must ask Mr. Murray what fully authenticated head of the fifth century, from a statue, an ἀγάλμα, we have upon which to found his denial ? Take the head of the beautiful charioteer recently discovered at Delphi (*Homolle, Monum. et Mém.* IV. 1898, pls. xv. and xvi.), and consider the treatment of the hair in this statue, especially in the treatment of the "ear and of the locks of hair in front of the ear," not to mention the singular indication of whiskers. Yet I doubt whether anybody will place this head less than forty or fifty years before the year B. C. 420. Moreover, these locks before the ear recur in all the other

replicas of the Diadumenus head. When Mr. Murray considers all these facts, I believe he will not refuse our congratulations on his having under his charge in many respects the finest of the Polycleitan Diadumenus heads.

I subjoin some notes taken before this head chiefly in view of a comparison with our head of the youth from the metopes of the Heraeum :—

Generally softer and more detail than in our head, but coarser workmanship of actual carving excepting in hair. Head slightly rounder and broader in cheeks, shortened in proportion. The eye is similar to that of our metope head, the iris somewhat oblique, showing a downward look. Probably colored indication of iris, as in ours. The upper eyelid overlaps slightly at angle, a sharp short sunk line where upper lid fits into brow. Marked lacrimal gland. Short upper lip, slightly opened mouth. Lips do not come sharply to a point at angles, but the "laughing" muscle bulges out slightly. Nose and lips are much damaged, but the nose clearly the same broad, thick character as in ours. Hair : the band seems sunk more into curly hair, which gives way and spreads over it, than in other Diadumenus heads. Curls well defined on (its) right side of head. Bulge out strongly towards back on that side. They are real curls worked in careful bronze technique. Here an interesting point : While on the top of the head and on sides we have really modeled locks, separately modeled in relief, the flat Doryphorus type of hair has survived in other parts. So in front, under the curls there remains the engraving technique of regular parting of the Doryphorus. Nay, this characteristic symmetrical arrangement shows in the curious survival of two tusk-like meshes of hair further towards the side showing under the band . We also have

the same lock at the side of the ear in front. Behind and above his right ear the band, which was crossed over behind, was pulled out and held in his upraised hand. At back on the right side there is a curious grooving work, where the band might have been. This must have been like drill-work at the back of our metope heads, though now corroded away.

When the light falls from above we can detect a soft rising or puffing under lower lid at the infra-ocular depression, which I remarked in a clearer manner in the Athens head. Also note slight "bronze" *appliqué* ridge or sharp edge over left eyebrow as in earlier bronzes.

As far as the face, from the brow downwards, goes, our metope head is nearest to this. The hair in ours is in rougher masses and less defined, but locks by the ear same in their general arrangement.

Let me finally add that when Mr. Murray notes the pouting expression of the British Museum head, and considers that this 'air morose' does not suit a victor, he points to a characteristic feature which *all* the Polycleitan heads, from the Doryphorus downward, have in common. It arises chiefly out of the peculiar treatment of the lower lip, which can be seen in all our heads, in conjunction with the generally heavy treatment of the nose and other fea-



depression under the left eye of the head,<sup>1</sup> a degree of "literalness" in detail modeling which is paralleled by the curious rise in the groin of our torso from the Heraeum metope. And this work cannot be placed later than 420 B. C.

The result of any careful comparison of these heads shows that the Doryphorus, as well as the Diadumenus, is clearly Polycleitan; and that the Diadumenus marks a distinct advance in freedom and delicacy of modeling over the Doryphorus. Furtwängler,<sup>2</sup> while assigning to the Doryphorus and the Amazon the date B. C. 440, thinks that the Diadumenus should probably be assigned to the same later period of the artist's career as the Hera (B. C. 420). "I think," he says, "I am not mistaken in finding certain kinship with the coin of Hera." Without attempting to assign any precise date, all that we are prepared to state is that the Diadumenus presents the master's latest style; that all these heads of the Diadumenus are of the same general character as the head of our youth from the Heraeum metopes, and that some of them invite interesting comparisons with our larger female head, which we have called Hera, and that it was the revelation of finish and delicate modeling in our torso from the metopes which enabled me to appreciate these qualities in the heads of the Diadumenus.

A full appreciation of the Diadumenus and of our Heraeum finds gives us quite a new conception of the art of Polycleitus. For years I had in my teaching constructed a view of Polycleitus based chiefly upon the Doryphorus, the poor copy of the Diadumenus from Vaison,<sup>3</sup> and the Amazon, as well as upon the chief passages referring to him in Pliny<sup>4</sup> and Quintilian.<sup>5</sup> In this light Polycleitus appeared as an artist of undoubtedly great talent, but devoid of genius, who never attained to the truly artistic and spiritual expression, the grandeur of a Phidias, and was wanting in weight — *deesse pondus*. And though he may have added ideal beauty to his statues, he never attained that ideal which the Greeks, like Phidias, embodied in the statues of their gods — *nam ut humanae formae decorem addiderit supra verum, ita non explevisse deorum auctoritatem videtur*. His great merit lay rather in the academic direction of sober construction, drawing together in a masterly manner, in technical and more theoretical control over his art, the separate currents of genius in the various Greek artists that made for the pure beauty, grace, and grandeur which Hellas has handed down to posterity — *erudisse* but not *aperuisse*. The highest praise bestowed upon him and his works is more of a theoretical and sober nature, *diligentia ac decor*. He is thus able to establish a canon of human proportions from which subsequent artists could take the rules of art as from a law — *quem canona artifices vocant linamenta artis ex eo petentes veluti a lege quadam*. But he achieves this at the cost of the spontaneity and variety of his productive genius and imagination. And thus there is a certain sameness in his work, which a mere survey of the subjects ascribed to him — chiefly athletes and purely masculine figures — suggests, so that they

tures. It is another strong point showing that all these heads, including our Heraeum heads, are of the same school.

<sup>1</sup> See account of the head at end of previous footnote.

<sup>2</sup> *Meisterwerke*, p. 442.

<sup>3</sup> In the British Museum. This copy has long been recognized as inadequate and as being worked over in the head. It appears to me as if there had not been sufficient marble on the left side of the head, or that some accident had forced the copyist into greater flatness here.

<sup>4</sup> *N. H.* XXXIV. 56: *Proprium ejus est uno crure ut insisterent signa excogitasse, quadrata tamen esse ea tradit Varro et paene ad exemplum.*

<sup>5</sup> *Inst. Orat.* XII. 10. 7: *Diligentia ac decor in Polycleto supra ceteros, cui quamquam a plerisque tribuitur palma, tamen, ne nihil detrahatur, deesse pondus putant; nam ut humanae formae decorem addiderit supra verum, ita non explevisse deorum auctoritatem videtur; quin aetatem quoque graviolem dicitur refugisse nihil ausus ultra leves genas.*



are all after one pattern, or closely follow the model — *proprium ad exemplum* or *unum exemplum*. One can even recognize this in that it is thought necessary to draw attention to one definite attitude, the walking attitude, as peculiar to him, — *proprium eius est uno crure ut insisterent signa excogitasse*, — an advance over the stiffness of archaic artists which the transitional sculptors, Pythagoras of Rhegium, and Myron, had long since achieved. And all his works are rather heavy and massive, vigorous and square in type, — *quadratae tamen esse ea tradit Varro*, — sane and healthy and unsentimental, like the Doryphorus. On the whole, with all his greatness and the lasting advance his activity marks in the history of Greek art, he followed the conservative spirit of Argive tradition as confirmed by Ageladas and laid down in the archaic period by the sculptors who said of themselves in an inscription that they practiced art “as handed down by their forefathers.”<sup>1</sup>

This was, in short, the estimate I had previously formed of the art of Polycleitus. Yet even while enunciating these views, I had frequent misgivings when I realized the supremely high place accorded him by antiquity, his juxtaposition with Phidias, so that sometimes, as is done by Cicero, he is even placed highest in the scale. I felt that the Doryphorus by itself, as we know that statue, could not account for the beauty and grace ascribed to his statues and his heads, by trustworthy authorities. With the discovery of our Heraeum marbles, and of the new and better copies of the Diadumenus and the advance these mark in the treatment of the head, the doubt as to the fairness and completeness of my former view became stronger, and a complete reconsideration of the ancient literary records concerning that artist has convinced me of this one-sidedness. While I feel that in general the former negative appreciation of the great master holds good for the Doryphorus, I am convinced that such a view would apply to the artist's career only at the earlier stages, to which the Doryphorus belongs (say somewhere about B. C. 450), while the work at the Heraeum (circ. B. C. 420) marks a later and far more advanced period. Who could do justice to Raphael if he only considered the works of the earlier Peruginesque period?

While thus, in spite of its one-sidedness and consequent exaggeration, my former view does apply to one characteristic side of this great Argive sculptor, we must now realize that there were many sides not adequately touched by it, and these not only present a greater variety and versatility of subject, but even show that the quoted passages dealing with his style and technique suggest a different interpretation in the light of the new discoveries of the Diadumenus and of our Argive marbles.

The chief artistic qualities of Polycleitus are summed up by Quintilian as *diligentia* and *decor*, qualities which I formerly felt were not naturally in harmony with the master of the Doryphorus, the creator of the square, massive, healthy type of physical strength, with broad chest and strong limbs standing in simple power upon one leg, the other resting on the toes behind.

This *decor*, as we can now understand it, comes nearest to our word “beauty,” the absolute beauty of form. To render this absolute beauty of form in human beings, the artist had to avoid the developed forms of mature manhood, and had to limit himself to youth (*nihil ausus ultra leves genas*); and though he no doubt idealized the forms of youth into complete harmony and beauty of proportion (which he established in his canon) as they are not met with in nature, combining the actual details of life into the

<sup>1</sup> τέχνην εἰδότες ἐκ προτέρων, inscription on the work of the early Argive sculptors Eutelidas and Chrysothemis, mentioned by Pausanias, VI. 10. 4.; Overbeck, *Schriftquellen*, No. 388.



ideal unity of perfect harmony (*ut humanae formae decorem addiderit supra verum*), he could not give them that spirituality of expression and soul and character and dignity inherent in the great gods like Zeus (*non explevisse decorum auctoritatem*) which Phidias had given. He had further to avoid the violent contortions of the body and the expression of moods and pathos in the face to preserve his beauty of outline in the body and his severe proportion of line in the face. And further, this absolute beauty did not in his works depend upon the sensuousness and softness of treatment (he is still the sculptor of the "square" Doryphorus, a character maintained in essence in the body of the Diadumenus), not upon the *morbidezza* of the modeling of flesh, as in the later fourth-century art, nor upon the anatomical insistence in modeling of muscles, as in Hellenistic art. It is thus significant that we find only two statues of female figures enumerated among his works; one was the most serious and matronly divinity Hera, and the other the most masculine woman, the Amazon. His "beauty" of treatment depended upon proportion and line and upon the extreme and perfect finish of his work without appeal to sensuous associations. This is expressed in the word *diligentia*, which leads to the *decor*. This finish within the careful study of line and outline in his composition of every figure, he put into the most careful and complete modeling of every detail so that, as Cicero<sup>1</sup> indicates when he instances the treatment of the lion-skin or the Hydra in his statue of Heracles with the Hydra, every detail of modeling is given with the utmost completeness and mastery. And this quality of art Polycleitus himself singles out with emphasis in the words which Plutarch puts into his mouth.<sup>2</sup> "The earlier stages in sculpture are not so important," he says; "the real work of the true artist begins when it comes to the finest last point of finish, the finger-nail point, when the clay adheres to the finger-nail." "There are," he observes, "the ordinary workers in any sphere, and those who really advance their art in the world, — those with high ideals, who must go further than what is 'just good' or 'just good enough,' 'who use their ideal as if it were a measure,' and give the most difficult last touch of perfection which makes the great work."

This was the aim he set himself, and in his sculpture it led to the complete harmony of line and the extreme finish of the modeling. Without suggesting anything like realistic reproduction, it means supreme finish of detail; and the instances of such supreme finish in the nude male torso from our metopes and in the hair of the Diadumenus help us to realize this.

We can understand thus that, sacrificing everything to this absolute beauty of form, he may be wanting in the weight (*pondus*) and sublimity of a Phidias, in the sensuousness and pathos of a Praxiteles and a Scopas, in the dramatic action of the Pergamenians and Rhodians. Raphael could not remain Raphael while giving the strength and grandeur of Michael Angelo, or the sensuousness and glow of Titian, or the dramatic sensations of the Carracci. Polycleitus is the sculptor of Beauty, as Phidias is the sculptor of Sublimity, Praxiteles of Grace and pure Greek sentiment, and the Pergamenians and Rho-

<sup>1</sup> *De Orat.* II. 16. 70: Similiter arbitror in hac sive ratione sive exercitatione dicendi, qui illam vim adeptus sit, ut eorum mentes qui . . . audiant ad suum arbitrium movere possit, illum de toto illo genere reliquarum orationum non plus quaesiturum, quid dicet, quam Polycleitum illum, quum Herculem fingeat, quemadmodum pellem aut Hydram fingeret, etiamsi haec numquam separatim facere didicisset. This also shows, as regards the

subject and the situation, that the fully developed Polycleitus was far from being restricted to the simple walking attitude of his Doryphorus; and we can understand how, when his task was to represent battle-scenes, as in our metopes and pediments, he could extend his *diligentia* to the adequate rendering of figures in motion.

<sup>2</sup> *De Profectib. in Virt.* 17. *Quaest. Conviv.* II. 3. 2.



dians of Action. This beauty we have long since called "classical," in the restricted sense, as distinguished from the ruder Gothic and the romantic. Polycleitus is thus the most truly classic artist of antiquity.

The fuller and truer appreciation of Polycleitus, our Heraeum discoveries enable us to grasp and make our own. In the future these marbles, together with the replicas of the Doryphorus and Diadumenus, will have to be the starting-point in the study of that artist and his school, as the few fragments from Tegea must be the fixed point of departure in the study of the art of Scopas.

## DESCRIPTION OF THE PLATES.

### PLATE XXX.

*Portion of a Metope fitted together out of seven separate fragments, consisting of Head, Torso, Legs above the knee, Shield, and Portions of the upper Background, with projecting band from top of a Metope.* The arms and shoulders are broken away; the left arm, extended, held the shield, the inside of which is turned toward the spectator; the right arm and shoulder were drawn back, and, no doubt, the hand held the sword or spear. The action of the figure is not clear: the weight rested on the right leg, which was bent outward, the left leg drawn up so that the thigh approached a horizontal position, the body twisted round toward the right and slightly drawn back. The head, turned toward the right shoulder and inclined downward, suggests an adversary lying or crouching on the ground, on or against whom the uplifted left foot may have been pressed.<sup>1</sup> The action of the warrior would then denote a drawing back of the upper part of the figure in order to strike or thrust downward. A small drill-hole in the abdomen near his right groin might, then, perhaps, have served to fix a bronze support to the shaft of the spear, which would have passed from his upraised right hand, drawn backwards, down past his left thigh to the opponent at his feet. On the other hand, the action may denote a drawing or sinking back on the part of a wounded warrior, and the forward droop of the head might support this view, as well as the fact that the shield is turned out so as to show the inside, and leaves the body unprotected. The small drill-hole might, then, have held a bronze arrow, or the point of some other weapon, to denote the fact that the warrior was wounded.<sup>2</sup>

Like the warriors in the Aeginetan pediment and the groups at Olympia by Onatas,<sup>3</sup> the warrior was thus armed only with helmet, shield, and spear (or sword), and had no breastplate or greaves.

Dimensions:—

Total height as mounted . . . . .	78. cm.
Breadth " " . . . . .	63.
Elevation of figure from background . . . . .	17.5
Breadth of body at waist . . . . .	15.7
" " " at groin . . . . .	16.
" " " below shoulder . . . . .	19.8
" of neck . . . . .	7.6
" of right thigh . . . . .	10.7
Depth " " . . . . .	11.5
Height from base of neck to mouth . . . . .	23.
Estimated breadth of shield (horizontal diameter) . . . . .	54.

Unfortunately, the body of this warrior is so much fractured, and what remains of the surface has suffered so much from corrosion, that the surface of the figure cannot give us an adequate notion of the finished modeling carried to so high a point of excellence in these metopes, although it does convey the life-like freedom in the pose and general composition. Fortunately, however, another male torso from the metopes (PLATE XXXIV.) is in a wonderful state of preservation with regard just to the surface modeling of the nude, and thus supplements our knowledge of the style and workmanship of the artists who made these metopes. Still, in spite of corrosions and fractures, the working of the muscles on the warrior's right side above the waist, as well as in the region of the groin<sup>4</sup> and of the thighs, manifests careful observation and study of muscles and high finish of modeling. There is but one further point to which it is important to draw attention, as bearing

<sup>1</sup> Compare for possible parallels the metopes in Michaelis, *Der Parthenon*, pl. iii. Nos. iii., xxiii., xxiv., xxvi., pl. iv. No. xxxi., pl. v. Nos. ix., xiii.; *cf.* also, pl. iv. and what is said on this point there.

<sup>2</sup> Finally, as the whole of the front portion of the body

has split away, it is conceivable that the drill-hole was used to repair this fracture (caused by some flaw in the marble) in ancient times.

<sup>3</sup> Pausanias, V. 25. 10.

<sup>4</sup> See on this point remarks on PLATE XXXIII.



upon what has been said in the Introduction to the Sculpture as regards the methods of manipulation in the marble-work employed by Polycleitan artists: it is the frequent use of the drill. This is used to bore holes for the insertion of bronze bars or ornaments, as the small one at the groin, the larger ones in front of the ear and immediately below the helmet, and the still larger ones above the shield. The hole between the ear and the right temple either served to hold some bronze ornament connected with the helmet, or held the end of a spear which indicated the fatal wound received by the warrior. The large hole over the shield shows that these metopes, differing in this from those of the Parthenon, were marble slabs, comparatively thin, fixed on a ground behind the metope, and not the solid blocks, part of the whole construction of the entablature. It shows that the marble imported from a distance was valuable material which had to be used economically. Still more interesting is the use of the drill at the back over the buttocks, to work away the material from the background, a practice already referred to in connection with the metope heads. The head, on the other hand, is in excellent preservation, not even the tip of the nose being wanting. It is evidently that of a warrior with a crested helmet. A portion of the crest is broken away. The head and face have all the massive, square proportions common to the other metope heads (cf. PLATE XXXI.), with the same broad forehead, the same massive, heavy cheeks and rounded chin, the same nose, broad from root to tip, the same treatment of eyelid and orb, though here the inward slant of the orb is probably connected with the downward look, which again may be the only sign the sculptor adopted to indicate the suffering of a wounded warrior. Above all, there is the same extremely characteristic mouth, with the short, protruding upper lip, and the curious flattened arch, indicating more of the red portion than is usually the case, while the lower lip, not tightly pressed to the upper lip, has the same fullness and the projecting thickening in the middle — all giving a peculiar pouting, stolid expression which is borne out by the heavy character of the face as a whole.

Dimensions: —

Breadth of face . . . . .	8.6 cm.
Length of face (helmet visor to chin) . . . . .	10.2
Depth of head (forehead to back of helmet) . . . . .	13.2
Outer corner of eye to outer corner . . . . .	7.2
Inner corner of eye to inner corner . . . . .	2.3
Breadth of nose (at nostrils) . . . . .	2.5
Breadth of mouth . . . . .	2.7
Breadth of helmet, extreme . . . . .	11.4
Length of nose . . . . .	4
Breadth of ridge over crest . . . . .	1.8
Height of visor . . . . .	2.8
Breadth of eyes (outer corners) . . . . .	2.7

It will be seen that these measurements are practically the same as those of the youth's head figured as Nos. 1 and 2 on the next Plate.

PLATE XXXI.

**Nos. 1 and 2.** *Two views of a Youth's Head from a Metope.* Parian marble. This head was first published by me in the *American Journal of Archaeology*<sup>1</sup> shortly after its discovery in 1894. As we realized immediately after its discovery, the head of this *ephebus*, corresponding in its peculiar size and style of workmanship to all the other metope heads from the Heraeum, bears the unmistakable characteristics of Polycleitan sculpture as manifested in the hitherto known statues of the Doryphorus and Diadumenus.<sup>2</sup>

Dimensions: —

Height of fragment (neck, 8 cm.) . . . . .	15.9 cm.
Breadth of face (cheek to neck) . . . . .	8.7

<sup>1</sup> Vol. IX. (1894), pp. 331 ff. pl. xiv.; reprinted in *Papers of the American School of Classical Studies at Athens*, vol. VI. pp. 252 ff. pl. xx. It has since then been reproduced by Mr. Frazer, *Pausanias*, vol. III. p. 172.  
<sup>2</sup> For the further description of this point, as well as

the conditions of its discovery, I must refer to the original paper in the *American Journal of Archaeology*, as well as to what has been said on pp. 168 ff., in the Introduction to the Sculpture in this volume.

Height of face (hair to chin)	10.6
Depth of head (forehead to back)	13.2
Outer corner of eyes to outer corner	7.3
Inner corner to inner corner	2.2
Length of nose	4.
Breadth of nose (at nostrils)	2.3
“ “ mouth	2.7
“ “ eyes (inclusive lids)	2.7

Both in the profile and in the full face view the head shows the squareness and massiveness characteristic of Polycleitan types. These characteristics are moreover manifested in a marked manner in all the other features, especially in the nose and mouth. The nose is perfectly preserved, and presents a broad ridge from root to tip, with a *very* slight thickening about the middle. In proportion to its width it is thus comparatively short, and adds to the heavy expression which this and the other heads from the metopes have in common with the heads whose attribution to Polycleitus is well-established. One of the most characteristic features in this and in all our metope heads is the mouth. As the strikingly individual treatment of this expressive feature in the human face is common to all these heads from the Heraeum (the Hera as well), and is to be found in the same form in the heads hitherto recognized as Polycleitan, I must here enter into further details.

The peculiar pouting or, rather, stolid expression which all these heads have in common is due not only to the strikingly thickened and protruding mass of the lower lip to which reference has been made above,<sup>1</sup> but to the treatment of the mouth in every aspect and in every part. In the upper lip, which is never firmly pressed upon the lower lip, the thickness of the projecting deep red portions of the human lip is markedly indicated in almost the whole extent of the lip towards either corner of the mouth,<sup>2</sup> whereas in most other sculptured heads this thickening serves to accentuate

the rise of the firm archer's bow (so-called Cupid's bow) on either side of the middle, and thus loses the effect of heaviness by contributing to the well-curved, symmetrical outline of this bow firmly drawn. This difference can be best appreciated by comparing, for instance, the mouth of any one of the Polycleitan heads (Fig. 88<sup>a</sup>), including all ours, with the type like the head at Bologna, identified by Furtwängler with the Lemnian Athena of Phidias (Fig. 88<sup>b</sup>). Owing to this difference, moreover, the downward protrusion in the middle of the upper lip seems to be caused in mouths like

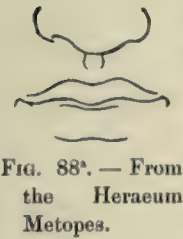


FIG. 88<sup>a</sup>. — From the Heraeum Metopes.



FIG. 88<sup>b</sup>. — From the Lemnian Athena.

that of the "Lemnian Athena" by the upward curve of the two bows of the arch on either side of the middle; and this gives to the whole mouth an expression of vivacity if it does not suggest a smile — the central protrusion seems to be caused by the upraising and arching of the portions on either side of the centre. In our Polycleitan heads, on the contrary, this central protrusion of the upper lip actually appears like a downward pressure of the centre, because there is no active suggestion of an upward movement in the portions of the lip on either side of the centre.

Still more characteristic and individual is the treatment of the upper lip when seen in profile. The distance from the point where the lip joins the nose to the beginning of the "red" of the lip is almost abnormally short in all the Polycleitan heads, especially when considered in proportion to the distance between the beginning of the red in the upper lip above and the end of the red in the lower lip below. This will become clearer when all these heads from the Heraeum, together with all the Doryphorus and Diadumenus heads known, as well as some of the most characteristic Amazon heads (such as the Amazon of Berlin and one in the British Museum, London)<sup>3</sup> are placed side by side. It will then be seen how all have this marked feature in common, and this will be realized the more readily when the treatment of the upper lip in these is compared with

<sup>1</sup> Cf. p. 159.  
<sup>2</sup> Mr. Edward Robinson drew my attention to the flattening of this curve in the front view.  
<sup>3</sup> On the ground not only of this feature, but of the general outline and character of the heads as a whole,

I should consider the Amazon heads which Michaelis (*Jahrbuch des Kais. Deutschen Arch. Inst.* Berlin, I. 1887, pp. 27 ff.) assigns to type I., as nearer the art of Polycleitus than either type II. (the Amazon of Woerlitz, pl. iv.) or type III. (the Amazon at Petworth, pls. i. and ii.).



that of the so-called Lemnian Athena. It will then be seen how the space between the nose and the red of the lip in all Polycleitan heads (Fig. 89<sup>a</sup>) is not more than half the distance between the limits of red in the upper and lower lip;<sup>1</sup> while in the Lemnian Athena (Fig. 89<sup>b</sup>) the two distances are about equal. The rough sketch of this feature here given will illustrate this point.

Furthermore, it is important to note that this interval in the Polycleitan heads is strongly curved inwards, the curve projecting slightly where it joins the red of the upper lip, while in the Lem-



FIG. 89<sup>a</sup>. — From the Heraeum Metopes.      FIG. 89<sup>b</sup>. — From the Lemnian Athena.

nian head it is comparatively straight or shallow without the marked projection below. The effect thus produced in the Polycleitan heads is, that the upper lip, in fact the whole mouth, protrudes, and accentuates in its totality the pouting or heavy expression which we have already noted in the lower lip.

The chin is slightly damaged.

The hair has already been described on pp. 171 ff.

Reference has already been made to the peculiar use of the drill in this head for purposes of undercutting where the head approaches the background of the relief.<sup>2</sup> The left side of the head and the portion of the back of the head toward the left side were nearest the background, and though they were rudely undercut, there is no attempt at finished modeling here, neither the locks of the hair nor even the left ear being indicated.

Deep grooves that are left manifest this rough work of the drill as well as that of the chisel. From this working it appears that the head was not meant to be seen quite in profile, but slightly turned round towards the left shoulder of the figure.

**No. 3.** *Head of Amazon from the Metopes.* Parian marble.

This head, found in 1892, was already figured and described by me in the preliminary publication.<sup>3</sup>

Dimensions: —

Height of fragment (pointed helmet included)	22.6 cm.
Breadth of fragment	15.
Depth of head	12.3
Extreme breadth of face	8.3
Width from outer corners of eye	6.6
Inner corner to inner corner	2.4
Length of nose	3.6
Breadth of nose (at nostrils)	2.5
Breadth of mouth	2.8
Breadth of eyes	2.5

In the preliminary publication I left it doubtful whether this was the head of an Amazon or not. Further comparative study of the head itself and of other Amazon types, as well as the fact that some portions of the female figures among these metopes were of Amazons (see, for instance, PLATE XXXV.), make it practically certain that this head is that of an Amazon. The peculiar helmet, rising to a point like a Phrygian cap, is typical of the Amazon. It appears to me that the helmet here given is really a development of the Phrygian cap in metallic form. Perhaps the sculptor invented this form of helmet for the Amazon out of the Phrygian cap typically ascribed to her. This would explain in an interesting manner the curious piece of drapery which flaps back from the head on the left, immediately below the helmet, above the hair. It is readily confused with the hair at that point. This piece of drapery in this position, under and behind the helmet, is a kind of "survival" of the soft Phrygian cap made of cloth. The cloth cap, as we see it in Persians and Amazons (for instance in the figures of Persians and Amazons in the Vatican and at Venice, ascribed to the Pergamenian school), was like the long-pointed knitted caps which the

<sup>1</sup> Of course there is a slight variation in this proportion, as the lips are more or less parted.      <sup>2</sup> *Excavations of the American School of Athens at the Heraion of Argos*, 1892, p. 16, pl. vii.  
<sup>3</sup> Introduction to Sculpture, p. 154 ff.

Neapolitan fishermen now wear, and either could be drawn far down over the back of the head with the flap hanging down, or could be twisted or tied at the back. When a metal helmet of this form takes its place, it appears that a piece of drapery was inserted under it at the back of the head, probably meant to protect the back of the head from the sun, as is frequently done with helmets and military caps in the present day. One of the Amazons from the frieze of the Mausoleum of Halicarnassus<sup>1</sup> shows this arrangement in a manner very similar to that of our Amazon from the Argive Heraeum.

Though this head is slightly disfigured by abrasions at the tip of the nose, over the right eye, and on cheek and chin, it is in a comparatively excellent state of preservation, and shows in a marked manner all the characteristic features which we have hitherto ascribed to these heads. The evident inclination of the head to the left shoulder gives more expression or sentiment to this head than is usual among these works. The position of the head was almost in full face, slightly more towards the background on the right side, in which direction the head is inclined. At first it looked as if the mass broken away at the right was a kind of *puntello* joining the head to the background, and that thus the head was in profile turned to the right; but closer examination makes it more probable that this projection represented a mass of hair clutched by some adversary pulling the Amazon over on the right side. Still the head must have been slightly turned inward on the right, as this side of the face is less fully finished in carving than the other side, in which the hair and the mass of drapery beneath the helmet were fully visible.

**No. 4.** *A split Portion of the Head of a Warrior, from the Metopes.* Parian marble.  
There remains here the left half, including both eyes, of a helmeted head very similar to that of the warrior on PLATE XXX.

Dimensions:—

Height of fragment (chin to socket of crest)	. . . . .	16.6 cm.
Breadth of fragment	. . . . .	9.3
Depth of fragment (forehead to back)	. . . . .	13.3
Height of face	. . . . .	10.
Outer corner of eye to outer corner	. . . . .	7.
Inner corner of eye to inner corner	. . . . .	2.
Length of nose	. . . . .	3.5
Breadth of nose (at nostrils)	. . . . .	2.3
Breadth of mouth	. . . . .	2.8
Breadth of eyes	. . . . .	2.6

The side here preserved was evidently not the one foremost, from the spectator's point of view, since, towards the back, the carving is hardly finished, and must at that point have approached the background of the relief.

PLATE XXXII.

**Nos. 1 and 2.** *Female Head, from the Metopes.* Parian marble. Here given in full face and in profile.

This head is the only one from the metopes which was discovered by Rangabé in his excavations of 1854.<sup>2</sup>

Dimensions:—

Height of fragment	. . . . .	17. cm.
Breadth of fragment	. . . . .	12.5
Depth of fragment	. . . . .	15.
Breadth of face	. . . . .	8.4
Outer corner of eye to outer corner	. . . . .	6.6
Inner corner of eye to inner corner	. . . . .	2.1
Length of nose	. . . . .	3.3
Breadth of nose (at nostrils)	. . . . .	2.4
Breadth of mouth	. . . . .	2.7
Breadth of eyes	. . . . .	2.6

<sup>1</sup> Overbeck, *Gesch. der Griech. Plastik*, II. fig. 171, Series iv. No. 3.      <sup>2</sup> See General Introduction, pp. 67 ff.



The head is evidently that of a fully matured girl or young woman and, in its original position, was meant to be seen almost in full face (about  $\frac{3}{4}$  full face). The variation from the full face view consisted in the turn of the head to the right, so that the left side of the face was less fully visible than the right side. This is manifest from the fact that the right side (her left) is less complete in its modeling and elaboration. The hair, sketchily treated throughout, is hardly modeled at all on the left side, not more fully than it is on the back; the eye on this side is smaller and less fully and delicately worked in the orb, lids, and brow. The same applies to the cheek. In the profile view here given we have nevertheless presented this imperfect side because it illustrates so fully the methods of cutting away the stone from the background of the relief, and the use of the drill for this purpose—to which frequent reference has been made above. The whole square and massive outline characteristic of these heads is here manifest in both views, as is also the peculiar rendering of the several features, — eyes, nose, and, especially, the mouth. The hair, treated in a more sketchy manner than is the case in any of the other heads, is parted in the middle, the masses in front drawn over on either side, and tied together behind. They thus cover the ears, leaving only the lobes visible at either side. A noteworthy peculiarity in the treatment of this hair is the fact that the parting is not accurately in the middle of the head, above the centre between the brows, and that its line and direction does not follow the line of the nose. Further notice will be taken of this fact in the description of the helmeted head on PLATE XXXIII. As this head was not supposed to be seen in the profile view, neither of the ears is indicated with any degree of finish, — the lobes are merely sketched in. If we bear in mind the sketchy character of the work and the fact that this small head was to be seen at some distance from the spectator, we must be struck by the grandeur and dignity coupled with a severe grace which the artist here succeeded in giving to his work.

**No. 3. Female Head from the Metopes.** Parian marble.

A girl or young woman whose hair is grasped on the top of her head by some adversary (traces of the fingers still visible), the head being pulled over to the left.

Dimensions:—

Height of fragment (including 3 cm. of neck) . . . . .	19.6 cm.
Breadth of fragment . . . . .	13.
Depth of fragment . . . . .	13.
Extreme breadth of face . . . . .	8.6
Outer corner of eye to outer corner . . . . .	7.1
Inner corner of eye to inner corner . . . . .	2.1
Length of nose (broken) . . . . .	3.7?
Breadth of nose (at nostrils) . . . . .	uncertain
Breadth of mouth . . . . .	2.8
Breadth of eyes . . . . .	2.8

The scene given in this metope was evidently one of contest in which a female figure is being violently grasped by the hair. This situation is often presented in battles of Amazons (three times on the Phigalian Frieze, in the Mausoleum Frieze, and on numerous vases); or in scenes of the sack of a city (as when Cassandra is dragged from the altar at which she has taken refuge);<sup>1</sup> or, finally, in such scenes of abduction as are to be found in the Centaur battles. As the destruction of Troy was represented in the sculptures, according to the testimony of Pausanias, and the battles of Amazons, from the testimony of the extant monuments themselves, this head would probably belong to a group from one or other of these scenes. The situation, to the indication of which this head gave expression, is strongly individual, and thus the artistic treatment of this head differs in some respects from that of the others. It is more violently drawn to one side, and this action necessitates a greater degree of expression than is to be found in the placid heads hitherto described. The hair being drawn up on the top, the slightly indicated waves are all vertical in the grooves; while the line of demarcation between the hair and the forehead is indicated in a severe and precise arch from temple to temple; the brow remains comparatively smooth, but the line of the eyebrows is not so "placidly" horizontal with flat, broadened lines as is the case, for instance, in the head that we have just described. The line of the brow thus rises sharply upwards from the outer angle

<sup>1</sup> Cf. Overbeck, *Bildwerke zum thebischen und troischen Heldenkreis*, pl. xxvii.



towards the nose, and thus corresponds to the line of the more pointed arch in the demarcation of the hair above the forehead. The eye itself is more widely open, the orb more prominent and rounded than has hitherto been the case, while the lids are more evenly joined at the outer angle. The nose is unfortunately broken away. The treatment of the region immediately below the lower lid is also softer than in the heads previously discussed. The total effect of this treatment is a comparatively greater softness and less placidity and repose in the expression of this face than is seen in the head immediately above it. More complex sentiment is further produced by the hollow groove beside the nostril, accentuated by a softer rise in the cheek at that point. There are no further indications of emotion or suffering, — unless these be found in the treatment of the mouth, which is here more firmly closed than in any one of the other heads. The original position of the head was again probably almost full face.

**No. 4.** *Head of a Young Girl, from the Metopes.* Parian marble.

Dimensions: —

Height of fragment . . . . .	15. cm.
Breadth of fragment . . . . .	12.6
Depth of fragment . . . . .	12.7
Extreme breadth of face . . . . .	8.6
Outer eye to outer corner . . . . .	6.8
Inner corner to inner corner . . . . .	2.
Length of nose . . . . .	2.8
Breadth of nose (at nostrils) . . . . .	2.5
Breadth of mouth . . . . .	2.5
Breadth of eyes . . . . .	2.5

It was at first doubtful whether this head belonged to a male or a female figure, but further examination showed that it is undoubtedly that of a girl. The hair, though modeled with some care only in front (more especially on the right side), is quite unfinished and roughly blocked out on the top, back, and sides behind the ears, but the parting in the centre and the pointed arch-like demarcation of the line between hair and forehead show that it did not consist of short curls, but of long strands gathered up from either side of the parting and tied together behind. Moreover, the softer treatment in the modeling of the whole face shows it to be that of a girl and not of a young man. The actual position of the head in the relief was about  $\frac{7}{8}$  full face, the head turning towards the left (about like the view here given on the Plate), only slightly more turned to the left. This is evident from the fact that the left half of the face is less fully elaborated on the side, and more especially from the treatment of the hair and the ear. The ear is but very slightly indicated on the left side, while on the right side it is perfectly modeled, and seems slightly turned forward in order that it should be properly visible. Further, the hair in front on the left side is merely roughly blocked out at the point above and in front of the ear, while no attempt at complete modeling is made on this side from the parting to the ear at a distance of half an inch above the forehead. Moreover, it is on the left side at the back that a series of five drill-grooves are manifest. Unfortunately in this case, too, the nose is broken away, while the upper lip, which was curiously drawn up so that the teeth should show, is also damaged in the middle portion. The expression of this head is distorted by this slight fracture of the upper lip. The lower lip of the opened mouth shows the characteristic thickening in a marked degree. On the whole, this small head shows more vivacity than do any of the others, and, in spite of the disfigurement resulting from the fractures at nose and lip, possesses a peculiar charm.

PLATE XXXIII.

**Nos. 1 and 2.** *Head of Athena with Helmet.* Parian marble.

Dimensions: —

Height of fragment . . . . .	20. cm.
Breadth of fragment . . . . .	14.6
Depth of fragment (measured from front to back of helmet) . . . . .	17.
Extreme breadth of face . . . . .	10.2
Outer corner of eye to outer corner . . . . .	7.7



Inner corner of eye to inner corner . . . . .	2.7
Length of nose . . . . .	4.6
Breadth of nose (at nostrils) . . . . .	3.
Breadth of mouth . . . . .	2.7
Breadth of eyes (including lids) . . . . .	3.3

It will readily be seen that this head is slightly larger than those hitherto examined ; and though the head undoubtedly formed part of a high relief, the difference in dimensions caused a doubt whether it was to be ascribed to the metopes at all ; but when these dimensions were compared with those of the Amazon head measured from the point of the helmet to the chin, and when it was realized that this head was that of a divinity, the force of this doubt was no longer felt. This was especially the case when it was realized that similar differences exist in all known reliefs and metopes.<sup>1</sup> That this was the head of a divinity, in fact that of Athena, who would be present at such a contest,<sup>2</sup> became manifest when once it was recognized that this helmeted head was that of a female and not of a male figure. As in the case of the young girl's head just described, the treatment of the hair did not make this manifest at once, for the rough blocking out at the sides does not make it apparent to the hasty observer that it was long hair parted in the middle and drawn over the ears behind the back of the head. Careful observation of the hair at the side will, however, show that this is the case, and this conclusion will be confirmed when the mass behind the ear at the back is recognized as a continuation of the hair in front. The treatment of the fleshy part of the face, moreover, is softer than in that of the male warriors and the youth on PLATES XXX. and XXXI., and finds its closest parallel in the girl's head (PLATE XXXIII. No. 4). Unfortunately, the face is much disfigured by fractures at one side of the nose, which, so far as extant, together with the eyes, has the same characteristic treatment found in all these heads. This common treatment is still more marked in the modeling of the mouth. The helmet, too, the central portion of which is broken away, is peculiar to Athena on reliefs of this period. A detail of this helmet serves to illustrate clearly the care and "science" of the sculptor as he considered the peculiar "perspective" effects in sculpture from the point of view of the spectator. The effect of such considerations upon the sculptor has already been noted with regard to the sculptures of the Parthenon.<sup>3</sup> In the view presented in No. 2 it will be seen that the central division of the two halves of the helmet and the metal tongue which projects between them (the cheek pieces and the nose covering) are not in their proper place immediately above the middle of the forehead, nor do they follow the line of the nose. When, however, the head is seen more in profile, turned to the right and from below, as is the case in the view given in No. 1, this discrepancy, painfully manifest in the front view, is no longer felt. This is due to the fact that this head was not seen in full face, but slightly inclined upwards, and turned to the right. This is manifest from the fact that on the right side, ear and hair are not so completely worked as on the left side and show chisel marks. It was this position which necessitated the peculiar direction given this dividing line in the helmet in order that, from the spectator's point of view, the lines should fall in their proper places. In the same way the slight divergence in the parting of the hair of the female head on PLATE XXXII. is rectified when the head is turned slightly to the left and is seen from below ; while the Amazon head on PLATE XXXI., with the divergence between the central line of the helmet and the line of the nose, is also rectified when tilted back and viewed from the right—an experiment which can even be tried with the Plate.

**Nos. 3 and 4.** *Portions of two Heads.* Parian marble. From eyes to chin.  
Dimensions of No. 3 :—

Extreme breadth, cheek to cheek . . . . .	12.2 cm.
Height, bridge of nose to chin . . . . .	11.5
Outer corner to outer corner of eyes . . . . .	9.6
Inner corner to inner corner of eyes . . . . .	3.2
Breadth of nose at nostrils (base) . . . . .	3.6
Breadth of mouth . . . . .	4.2
Eye-holes . . . . .	5.3

<sup>1</sup> See Introduction to Sculpture, p. 148.

<sup>2</sup> Compare, for instance, the friezes of the Temple of Niké Apterus at Athens, the Theseum, etc.

<sup>3</sup> Cf. my *Essays on the Art of Pheidias*, pp. 79, 80, 205, 227.



Unfortunately, both No. 3 and No. 4 are in so fragmentary a condition that little can be said of them, and we can only feel regret at what we have lost in the missing parts. As will be seen from the dimensions, these heads, which belonged to figures in the round, did not form part of the metopes, nor have we strong grounds for attributing them to the pediments. The eyes in No. 3 were hollowed out with deep grooves, and were probably originally supplied by some paste set into the sockets.

In No. 3 there is a slight difference in proportion of outline, in that the cheeks at either side of the mouth maintain a square massiveness in an exaggerated form. This effect is no doubt heightened by the fact that the front of the chin is damaged. The mouth and nose, however, show the characteristic treatment of Polycleitan art; and the perfection of the workmanship in both these fragments makes us realize that these were once good specimens of the marble sculpture of the period of Polycleitus.

PLATE XXXIV.

*Two views of a Torso of a nude Youth, from the Metopes.* Right leg and arm upraised, with a hand pressed under this upraised arm, belonging to some figure against whom the youth is advancing to deal a blow with the sword, originally held in his right hand. Parian marble.<sup>1</sup>

Dimensions:—

Breadth of fragment as mounted ? . . . . .	34. cm.
Height of fragment as mounted . . . . .	55.
Depth of fragment as mounted . . . . .	23.
Navel to base of neck . . . . .	19.5
Nipple to nipple . . . . .	13.
Breadth of lower waist . . . . .	17.3
Breadth of lower waist just above navel (narrowest part of torso) . . . . .	16.
Breadth of thighs inside to outside . . . . .	11.
Breadth of thigh front to back (left thigh) . . . . .	11.3
Breadth of arm (raised) at shoulder (top to armpit) . . . . .	6.2
Breadth of wrist of hand placed on torso . . . . .	3.8
Breadth of hand on torso . . . . .	5.7

If in the metope representing a warrior (PLATE XXX.) we had to deplore the state of imperfect preservation of the surface, so that we learn but little from it as to our artist's modeling of the nude, it is a piece of great good fortune that this torso from the metopes has come down to us in an exceptional state of preservation with regard to the surface of the marble, as showing the finished modeling of the nude.

The youth here represented was undoubtedly a warrior shown in the supreme moment of contest in one of the battle scenes from the metopes. His opponent, to whom he is dealing the fatal blow, was probably not of his own sex, but an Amazon. This is suggested by the short, dainty hand with its little dimples on the back below the fingers, and the delicacy of articulation of each finger. The adversary has probably sunk down on one knee and is pressing her upraised hand against the youth's side below his upraised arm, while he, resting his weight upon his left leg, has probably planted his upraised right foot upon her thigh as she is kneeling before him just before he strikes. An extant portion of a thigh, including the knee-cap from the metopes (PLATE XL.), shows the foot of another figure planted just above the knee, in the manner in which the youth from our torso planted his foot on his fallen adversary. The upper part of the body was thus strongly drawn backward to the right, while the lower portion pressed forward to the left in the direction in which the upraised right foot was planted on the adversary. The left leg, upon which the weight of the figure was chiefly carried, must have been slightly bent at the knee, as is evident from the tension of the muscles of the thigh.

In the modeling of the nude this torso is among the finest that have come down to us from Greek sculpture. The general masses of muscles of the chest and of the abdomen, firm and decided in their articulation without hardness, gentle and flowing in the more delicate transitions without softness and without unnecessary insistence upon details, are as far removed from any trace of the

<sup>1</sup> Found in 1892. See *Excavations*, etc. pl. vi.; Brownson, *Am. Jour. of Arch.* VIII. pl. x.; Frazer, *Pausan.* l. c.



conventionalism of archaic art, or from the severity of the early fifth century B. C., as it is from the over-elaborateness and anatomical pedantry which began to set in towards the close of the fourth century B. C. In the skill of modeling and in the care with which every detail in the surface is finished, it really marks one step in advance of the metopes of the Parthenon. Though these metopes are larger, they do not show the same completeness of finish in the modeling which is manifested by these metopes of the Polycleitan period and school. The minute care in the rendering of each detail, to which attention has been drawn in the Introduction to the Sculpture (pp. 156 ff.), is illustrated by the delicate details in the modeling of the hand of the female adversary, and especially in the treatment of the upper parts of the thigh, and the curious round protrusion in the groin to which reference has already been made. I have had casts and photographs of this torso examined by several friends, surgeons and anatomists, leading authorities on this subject both in England and in America; but it has hitherto remained an unsolved problem. From their knowledge of the human figure derived from the dissecting-room and the operating-table they have not been able to account for this feature in normal anatomy. They either confessed their inability to explain it, or maintained that it was a pathological phenomenon, the result of a too violent strain or of the enlargement of the glands. But it was difficult to believe that, especially in this period of art, so accidental a feature should have been copied, especially when we realize that in the torso on PLATE XXX. we have in the right leg of the warrior an indication of the same rise, though in a slighter and less markedly visible form.

Recognizing these facts, I have carried on experiments with the living model under the direction of Dr. Louis Waldstein, whose letter I here subjoin, with the result that in two of the most powerfully developed professional athletes in London, the presence of this formation as a muscle in the human body was fully demonstrated. But the muscle appeared in this form, not when the athletes were in repose or general action, but only when the exact attitude of our torso was assumed by them. It was not even enough that the weight should be thrown on the bent left leg when the right leg was upraised, — to this had to be added the strain of pushing against an adversary with the upper body, as in our torso the combatant is pressing against the adversary whose hand is pressed against his side.

I cannot here dwell upon the interesting anatomical results of this observation. What it shows us in the first place is the careful observation of nature and the painstaking rendering of these observations in the art of modeling, — characteristics which the passages referred to in the Introduction emphasize as a leading feature in the art of Polycleitus. At the same time I cannot refrain from citing this as a striking confirmation of my exposition published some years ago, with regard to the influence of athletic games upon Greek art.<sup>1</sup> I there said:<sup>2</sup> "It was here [in the palaestra], with hundreds of nude youths, not only wrestling, jumping, and running, but endeavoring by systematic practice to remedy any defect or abnormality in any one limb or organ, that the artist day by day studied his anatomy of the human figure without the need of entering the dissecting-room or calling in the help of the anatomist."<sup>3</sup> I there pointed to the difference between the attitude of mind, observation, and creation of the ancient Greek and of modern artists in this respect. It must be regarded as a misfortune that the modern artist is dependent upon his one model, and receives his training as regards human structure from the anatomist.<sup>4</sup> On the contrary, the real "plastic anatomist" should in the future have to discard from his mind the reminiscences of the dissecting-room and should study the structure of the human figure — bones and muscles — in action, in their function, as the ancient Greek sculptor studied them.<sup>5</sup>

<sup>1</sup> See my *Essays on the Art of Pheidias*, pp. 394 ff., reprinted from the *Proceedings of the Royal Inst. of Great Britain*, 1883.

<sup>2</sup> Pp. 400 and 401.

<sup>3</sup> Cf. also bottom of p. 402 to p. 403; and pp. 406 and 407, where this point is further developed.

<sup>4</sup> It looks as if this had been the case in ancient Greek times only during the period of decline marked by the schools of Pergamon and Rhodes.

<sup>5</sup> FROM A LETTER OF LOUIS WALDSTEIN, M. D.

The striking round prominence in the left groin of the Argive torso suggests at once either an enlarged gland (*bubo*) or package of glands, or a rupture (*hernia*), because these are found exactly in that spot. But, for obvious reasons, both possibilities must be excluded from consideration, from the artistic as well as from the medical point of view.

The triangle, which is so well marked in the figure, is occupied also by the large blood vessels and the crural



## PLATE XXXV.

**No. 1.** *Torso of a Warrior with breastplate in high relief, from the Metopes.* Parian marble.

It is evident that this fragment belongs to the metopes, as it is of the same dimensions and workmanship and shows at the back a portion of the background of the metope, while the technique corresponds to that of the best specimens from the metopes, — those given on this Plate, as well as smaller fragments not given here. The fragment belonged to the figure of a warrior seen in full face, in violent action, the lower part of the body turning towards the left, while the upper part is turned towards the right; the right arm pressed over the breast towards the left shoulder. Though the warrior is protected by a breastplate reaching to the waist, we cannot be absolutely certain whether we have not here a female figure (an Amazon?), as the drapery covering the thigh below the waist, and the rounded form which it covers, are suggestive of female garments and forms. Unfortunately, but very little remains of this figure, and the greater part of what does remain is in such a fragmentary condition that it does not help us towards further identification. The well-preserved portions are the lower part of the breastplate and the drapery below it from the waist to the upper part of the thigh. These portions, however, convey clearly the exquisiteness of artistic finish in the modeling of these metopes. The undergarment has evidently been massed together beneath the belt round the waist under the breastplate, and thus produces a succession of short, thickly massed folds, which have their analogy in the same arrangement (though on a slanting line downward) in No. 2 of this same plate. Below these thickly massed folds the undergarment of thin texture clings about the rounded forms of the thigh in very delicate folds that are indicated by slight flat ridges in relief — a method of indicating thin and pliant drapery covering rounded forms without interfering with the indication of the roundness in human, especially female, figures. This same method can be noted in the region of the thigh of No. 2 and of the right side of the waist in No. 3 on this same plate. It is the same system which is to be found in the drapery below the breasts of the large female torso from a pediment of this Temple, figured on PLATE XXXVII.

nerve, all of which, however, are found laterally from the prominence in question. There remain therefore to be considered only the muscles of that region. In order to bring them well into view the leg must be flexed in the knee, and must be fixed with unusual tension of all those groups of muscles that serve to fix the pelvis upon the thigh; the whole body must, in fact, rest upon the left leg. In this position the extensors along the front of the thigh bulge out, and the adductor group is well contracted, so that the triangle (Searpa's) is clearly defined. It will be seen that the nodule in question is in no way connected with any of the muscles forming the triangle, but that it is clearly separated from its base and its median boundary: it must, therefore, proceed from that structure which forms the floor of the triangle. These are the Pectineus and Ilio-Psoas muscles, whose function it is either to flex the trunk upon the fixed thigh, or to draw up and inwards the thigh upon the trunk. Of these two functions the first only need be considered, since, in the figure, the leg is in a rigidly fixed position, all the more fixed as the right leg is raised, and as the other combatant is endeavoring to throw the entire weight of the body beyond the left leg.

Constructively and functionally, therefore, it is comparatively simple to explain the round swelling under consideration, and to see in it the forcibly contracted Pectineus muscle, a muscle which from its origin along the anterior ridge of the pubic bone to its insertion directly under the *trochanter minor* of the thighbone, is

directed obliquely towards the back and side of the median line. It is this course that so sharply defines the form of the protuberance, for it corresponds only to the uppermost part of the muscle, which is alone near enough to the skin to appear thus clearly, while the remainder of the muscle gradually recedes more and more from the surface and is therefore hidden from view.

In the living subject the Pectineus seems to be feebly developed, for it could be seen but very slightly protruding in two powerfully developed athletes, while in other subjects no such indication of its functional power was produced. This proves, it would seem, that the exercises of the modern gymnast do not engage this group of muscles; for it must be said that the function of the Pectineus is not isolated, but will necessarily go together with the Iliacus and the Psoas muscles. They are chiefly brought into play in wrestling, — wrestling, moreover, of a particular kind, where the athlete contracts forcibly the muscles of the gluteal region as well; all that apparatus, in fact, that serves to fix the ball and socket joint and thereby unite as into one rigid pillar the leg and the pelvis. This enables the combatant to oppose with the utmost power the force of a pushing attack. It would appear as if the modern wrestler relies much more upon subtle agility than upon a concentration of pure muscular power. Such, at least, must be the inference drawn from the fact that the Greek artist reproduces a powerfully contracted muscle, which can hardly be found in the modern gymnast.



Dimensions : —

Extreme height	. . . . .	45. cm.
Extreme width	. . . . .	21.5
Extreme depth	. . . . .	27.5
Height of relief from background	. . . . .	14.5
From base of neck to belt	. . . . .	26.
From breast to back	. . . . .	19.5

**No. 2.** *Torso of a Female Figure, probably an Amazon, from the Metopes.* Parian marble.

The arrangement of the drapery in this lightly clad figure is typical of that worn by Amazons. The light and short undergarment is fastened above her right shoulder, and then falls in undulating curves over her right breast, leaving the whole left shoulder and breast bare. It is held firmly to the body by a broad belt or *zoné* round the waist. The baring of the left shoulder and breast is not purely accidental and momentary, inasmuch as the amount of drapery thus left free is on this side massed together under the belt. The consequence is that two strongly marked masses of drapery, accentuating pronounced cross-lines in the composition of the figure, run from her right shoulder and the right side of her waist, slanting downward in diagonal curves. These lines, besides giving graceful variety to the composition, also accentuate the attitude: namely, the bending of the upper part of the body backward to our right, while the lower part, with the right hip, is pressed upward towards our left. The Amazon may thus be in an attitude of retreat or avoidance of a blow coming from her right side above, or may be sinking down on her left knee in consequence of a wound. In the modeling the same exquisiteness in the treatment, both of the soft nude portions and of the folds in the garment, is maintained. The rippling larger mass of folds, as the edge of the garment seems to flow from the shoulder to the waist, marks that combination of firmness and crispness, together with softness, which among extant monuments we find in the *Thalassa* or the reclining *Fate* in the Parthenon pediment, or the *Victories* from the *Niké* balustrade. The thicker mass, running crosswise to the belt above it and below, though full of life and variety, is not carried through with quite the same skill, especially as the rounded mass above the belt bulges out without a proper suggestion of its continuation below the belt. The broader, flatter masses of drapery below these cross-folds suggest the rounded forms that they cover in the manner we have noted before, and have the same flat folds in relief, interspersed between the smooth masses, clearly suggesting the nature of the drapery, and still accentuating the rounded forms. The large species of dowel-hole cut in the side below the left shoulder I am unable to explain, — whether it served for the insertion of some object in the original statue of the metope, or for some subsequent repair, or for some use to which the fragment was put when destroyed.

Dimensions : —

Extreme height	. . . . .	48.5 cm.
Extreme width	. . . . .	27.
Extreme depth	. . . . .	23.
Height of relief	. . . . .	16.5
From base of neck to belt	. . . . .	14.5
From breast to back of outer side (i. e. from right nipple to block)	. . . . .	17.

**No. 3.** *Torso of a Draped Female Figure, probably an Amazon from the Metopes.* Parian marble.

This torso comes from a figure similar to the one just described, only that there is no belt round the waist. The thin undergarment is here also fastened over the right shoulder, and expands from this point in four relief folds over the right breast and towards the middle between the breasts, where it evidently meets a similar arrangement of folds from the left shoulder (no longer extant). These two masses of folds where they meet create, as is usual, the V-shape overlapping of drapery at some distance below the neck between the breasts. From this point downward, in well-marked wavy curves, the drapery falls down to the waist. Towards the right side and below these marked folds, there are traces of the same treatment, suggestive of thin drapery over rounded forms, which has been noted before. The modeling of this fragment of drapery is bold and firm and yet delicate, completely in keeping with the finished style as we have recognized it in these metopes from every aspect.

Dimensions : —

Breadth of fragment . . . . .	25.6 cm.
Height of fragment . . . . .	34.
Depth of fragment . . . . .	15.
Breadth of torso below arms . . . . .	17.

FRONTISPIECE AND PLATE XXXVI.

*Four views of the Head of Hera, probably from the Western Pediment of the Temple.* Parian marble. Life size.

Dimensions : —

Height of head . . . . .	27. cm.
Breadth of head . . . . .	19.7
Depth (depth of head, 22.7) . . . . .	25.8
Breadth of face . . . . .	13.2
Outer corner to outer corner of eyes . . . . .	10.
Inner corner to inner corner of eyes . . . . .	3.1
Length of nose . . . . .	5.5
Breadth of nose (at nostrils) . . . . .	3.6
Breadth of mouth . . . . .	4.8
Breadth of eyes . . . . .	3.7

This head has been fully described in my preliminary publication of 1892.<sup>1</sup> I have also referred at some length to the discussion arising out of that publication in the Introduction to the Sculpture in this volume.<sup>2</sup> It will be seen that though most authorities, headed by Collignon,<sup>3</sup> have accepted my identification, others, headed by Furtwängler,<sup>4</sup> have somewhat rashly ascribed it to Attic art. The head is on the whole in excellent preservation, though the left side, from its position in the earth, has been strongly corroded, and the whole of this side, as well as the tip of the nose, has been worn away. The lips have suffered in the same manner. In all other respects, however, we may consider this to be one of the most representative heads of the great period to which it belongs.

The head formed part of a female figure, probably draped, and, from extant indications, the whole figure must have borne characteristics of grandeur, if not of severity, in attitude and execution. It was evidently meant to be seen in full face from the front view, for, though the hair is modeled in ridges at the back as well as at the front, it is much less finished, unmistakably showing that the back was not meant to be seen. Moreover, the head is placed without any turn to right or left on the neck, which again must have risen at right angles between the shoulders; and this position alone would be expressive of a certain solemnity, nay, severity in the general attitude. The same character is preserved in the composition and modeling of this head in every phase of the work. In full face as well as in profile the outline and general build of the head present that square rectangular massiveness which we have found to constitute a leading characteristic in all our heads as well as in those commonly attributed to Polycleitus. This broad, simple, severe character is maintained in the general arrangement and elaboration of the hair, in the severe lines of forehead and brow, as well as in every feature of the face, — though in this larger work the finish and refinement of the modeling is blended with the breadth and moderation which stamp the head as a whole. Moreover, we must always remember when comparing the execution of this work, originally destined for marble, with that of other Polycleitan works, which are copies from original bronze or gold and ivory statues, that a certain softness and indefiniteness is a characteristic inherent in marble sculpture as such.<sup>5</sup> The squareness of general outline is most pronounced in the profile view, whereas in the front view this is slightly counteracted by the necessary protrusion of masses of hair on either

<sup>1</sup> See *Excavations*, etc. pp. 8-13, pls. iv. and v.

<sup>2</sup> See pp. 164 ff.

<sup>3</sup> *Hist. de la Sculpt. Grecque*, II. p. 163.

<sup>4</sup> *L. c.*

<sup>5</sup> We have noted this modification of style as affected

by the technique of marble sculpture in Polycleitan heads in the treatment of the hair in our head of a youth from the metopes as compared with the Doryphorus and Diadumenus. Cf. pp. 169 ff.



side of the forehead. The scale of this deviation from squareness can be most readily appreciated when we compare in this respect the head of the Doryphorus with that of the Diadumenus, and finally arrive at the Amazon heads of Polycleitan type, in which this bulging out of the hair corresponds to that of our Hera. The hair was parted in the middle, the parting continuing behind the narrow *stephané* down the back of the head. From the middle of the forehead two masses of hair are combed to either side in a wavy line, and, covering the greater part of the ear,<sup>1</sup> are joined under the *stephané* above the back of the neck; while the mass of hair from either side of the parting behind these hangs in one thick coil down the back. A curious feature is the small braid-like line of curls which projects out of the central mass of hair between the *stephané* and the middle of the forehead. This curious feature is to be found in the Caryatids from the Erechtheum, and, as I have pointed out in the Introduction,<sup>2</sup> probably led to the singular misconception on the part of those who see Attic style in this head. The wavy mass of hair combed towards either side from the central parting covers the ears and allows only the lobes to be visible. Holes are drilled into these which evidently served to hold metal earrings. The line of demarcation between the hair and the forehead is firmly drawn in its arch-like outline in spite of the wavy contour of the hair, a feature which we have before noted in the metope heads on PLATE XXXII. The brow, too, is treated in broad simplicity without minute modeling and half-tones, herein also corresponding to the treatment of the metope heads on PLATE XXXII. The relation between the brow, the eyelids, and the orbs is very similar to the treatment of these metope heads, only that in this life-size head the working is more elaborate and the individual features more firmly cut. It is in the treatment of the eyebrow and the eyelid that the maker of this marble head betrays himself as being chiefly influenced by the firmer bronze technique traditional in his school.

In spite of the corrosion and the breaking away of the tip, the nose shows the same treatment that we have found in the metope heads and in heads attributed to Polycleitus. Unfortunately, these breakages give a wrong impression of the whole face, especially in the profile view. In the same way we must regret that the middle of the upper lip and the whole of its left side have been partly broken off or worn away. In spite of this, all the characteristics of Heraeum and Polycleitan heads that I have described in the treatment of these features are to be found in a marked manner in this Hera. The same is true of the lower lip and of the chin. At all events, I can hardly believe that we shall meet with a dissentient opinion conscientiously formed and honestly held in stating that if the Bologna head, supposed to be a reproduction of the Lemnian Athena, is characteristic of Attic art, then, in general character as well as detailed composition of the features and in modeling, this Argive head would be *contrasted* with it; whereas if the various heads, — that of the Doryphorus, the Diadumenus, the Amazons, and the so-called Bacchus head in the

<sup>1</sup> It has been maintained — though never, so far as I know, in print — that this head was of a far later date than the fifth century B. C., because it is held that in statues of the fifth and earlier centuries before our era the ear was not covered in this way, but was fully modeled. Apart from the fact that whoever would ascribe this work to a late origin proves himself to be utterly devoid of any appreciation of the broad difference of style in Greek art, the statement about the ear is flatly contradicted by the evidence of extant monuments. It is true that in heads of the Archaic period, notably on coins, the ear is generally completely modeled, even in an exaggerated form, where the hair ought to cover it. It may even be maintained that it was usual not to hide the ear in most heads during the earlier, and even the best, periods of Greek art. Still it will be well to ask ourselves the question, how many well-preserved, quite authentic heads, especially female heads with long hair, we have belonging to these early periods? Yet even among these it is well for us to realize that on our heads from the metopes of this very temple, such as the Amazon head, PLATE XXXI. No. 3, and two of the heads on PLATE XXXII., the lobe only is indicated,

as in this head of Hera. Moreover, we find, even as early as the sculptures from the Temple of Zeus at Olympia, that the ears of Hippodamia are completely covered; that on the nymph in the metope of the Hesperides, as well as in the female head in the metope with Atlas, the ear is covered as in ours; that in the Parthenon Frieze the maidens as well as Hera have their ears partly covered, and that the same is the rule with the Amazons and other female figures from the Phigalian Frieze, while it is emphatically true of the Polycleitan Amazon. Even on coins approaching the date of our statue we meet with the same treatment, notably in those from Argos representing Hera, one of which (taken from Mionnet's casts, Gardner, *Types of Greek Coins*, pl. viii. 14) shows the earrings hanging from the lobe. And if we go further afield among coins, a glance at those of Terina with the nymph Terina, of Cephallenia with the head of Procris, of Rhegium and Croton with the long-haired Apollo, will forever dispel this absurd generalization which I have heard quoted as a chronological landmark by an archaeologist of some reputation.

<sup>2</sup> Pp. 166 ff.



British Museum (which I have now identified with the Polycleitan Hera),<sup>1</sup> — if these represent the Argive work of the Polycleitan period, then this Hera shows most striking resemblances to it in every respect.

I have called this head Hera.<sup>2</sup> I fully admit that the identification of this head as Hera is far from being beyond all doubt, and if I continue to use the name of this goddess, I do not do this with any claim to dogmatic certainty. I only mean that among all possible designations this still appears to me the most likely. I do not see how any degree of probability attaches to the identification with Hebe. Even if the type of this goddess were fully established in well-identified specimens (which is assuredly not the case), I believe that the severe character and the indication of the age in our head would not correspond to the conception which, from other sources, we should form of this youthful attendant upon Hera. For though I do not see in this head any indication of a distinctly matronly character, it certainly suggests to me at once full maturity, stateliness, and grace. This very stateliness, together with the *stephané*, shows this head to be that of a divinity. In looking about the Greek divinities after Hera, there are three others to whom characteristics in this work might possibly apply: Aphrodite, Artemis, and Athena. This order marks my preference of identification. For Aphrodite the character and expression seem somewhat too severe, while the presence of the earrings and the general effect they must have produced seem to me to militate against the character of Artemis as well as of Athena. Finally, it might be maintained that this head may have belonged to one of the female figures of priestesses which, according to Pausanias (II. 17. 3), stood before the temple. Here, again, the absence of the veil and the presence of the earrings forbid such a supposition, and, moreover, the place where the head was found directly contradicts the assumption that it belonged to one of the statues placed in *front* of the temple. For the position of this head in the earth made it most probable that this was one of the few works which had remained on the spot where it had originally fallen. This spot was immediately in front of the western side of the temple, on a line with the stylobate. From the nature of this region at the west end of the temple, it seems highly improbable that statues were placed here on their bases; while the evidence from the numerous bases that were found still in the wide space in front of the temple at the east end shows that this was the region where statues were massed together, and not the back. The actual provenience of the head thus strongly confirms the view that the head belonged to a figure from the western pediment of the temple, from which it had fallen to the actual spot where good fortune enabled us to discover it in such excellent preservation, as one of the very few Greek heads of these, and one of the noblest from the fifth century B. C.

PLATE XXXVII.

*Torso of a draped Female Figure, from the Pediments of the Temple.* Parian marble.

As I have already stated in the Introduction,<sup>3</sup> this torso, which was excavated by Rangabé, certainly belonged to a pedimental figure. It is part of a life-size statue.

Dimensions: —

Breadth of fragment . . . . .	41. cm.
Height of fragment . . . . .	40.
Depth of fragment . . . . .	33.5
Breast to breast . . . . .	14.5
Width of upper arm at elbow . . . . .	8.8
Extreme thickness of upper arm . . . . .	9.2
Breadth of torso just below breast . . . . .	24.

That it formed part of a pedimental figure is evident from the fact that, whereas the front is modeled with exquisite finish, the back is only roughly blocked out. This will readily be seen by comparing the front and side views given on the Plate. A hole is cut in the centre of the neck, which may either have been worked in later times, when the temple was destroyed and the statue

<sup>1</sup> *Journ. of Hellen. Stud.* 1901, pp. 30 ff.                      <sup>3</sup> See p. 152.  
<sup>2</sup> Furtwängler (*l. c.*) maintains that it is certainly not Hera, but probably Hebe.



broken, or may have been a dowel-hole to hold the head when it was originally made, or during subsequent repair. So, too, a hole on the right shoulder of the figure (clearly seen in the side view) either may have been made for purposes of repair, or may have served to fix some bronze object or ornament. There are also traces of drill-holes in the drapery about the waist and under the left armpit. If the drill was used for the purpose of elaborating the folds of drapery in the marble, it was only applied roughly to work away the material and was not meant to be seen. The projecting portions of the drapery at this point which would have hidden these traces of drill-work have been broken away. The drapery above the breasts is much corroded, while below these it is in comparatively good preservation and shows exquisite modeling. The figure was clad in a thin undergarment (*chiton*), while round the shoulders hung a thicker cloak (*himation*), the edges of which can still be seen above the breast; these, falling over the back, were massed under the left arm of the figure, falling in a curve over the forearm and the hand. Mention has already been made in the Introduction<sup>1</sup> of the delicate modeling of the folds in the thin undergarment as it covers the breasts, which this figure has in common with the torso from the metopes. The naturalism of this modeling forms a striking contrast to the greater severity in a head like that of our Hera. This contrast is the rule, and not the exception, in the sculpture of this period. It is not greater than that between the modeling of the youth's head on PLATE XXXI. and of the nude torso on PLATE XXXIV., all from the metopes of this temple. In respect to the softness and elaborateness in the modeling of the female figure and the fall of the thin drapery over it, we should place this torso half way between the reclining Fate or Thalassa from the eastern pediment of the Parthenon and the sandal-binding Niké from the Balustrade of the Temple of Niké Apterus. Our torso would well mark the intermediate stage of development in this respect between these two works, which would, moreover, correspond exactly to the date ascribed to the building of the Heraeum.

PLATE XXXVIII.

**Nos. 1 and 2.** *Two views of a Fragment of the draped portion of the Lower Leg, from a Figure in the round belonging to the Pediments, standing on a plinth. Parian marble.*

This interesting fragment of a draped figure, manifestly in violent motion, comes from a life-size statue, which evidently belonged to the pediments.

Dimensions : —

Extreme height from top of knee to bottom of plinth . . . . .	55. cm.
Extreme width of base as extant . . . . .	21.6
Extreme breadth of base (including drapery) . . . . .	13.8
Extreme thickness of calf . . . . .	9.7
Thickness of plinth at the highest point . . . . .	9.

That this fragment belonged to a pedimental group is proved, not only by the fact that in marble and workmanship it corresponds to the numerous smaller fragments of drapery belonging to the same class of figures, which evidently formed part of a larger group (see Introduction to Sculpture, p. 152), but also by the fact that a figure in such violent motion could not have belonged to a single statue standing upon its base in the period of Greek art to which all these fragments belong. It might conceivably be a portion of a figure on a high pillar represented as floating through the air, such as the Niké of Paeonius at Olympia; but this Olympian figure was, if not unique, at all events not a common type of monument, nor is such a monument, which would probably have elicited a comment of Pausanias, mentioned by any ancient authority as being at the Heraeum. The figure was evidently hastening through the air, the wind driving the drapery over the leg into rounded folds behind. In all likelihood we here have a parallel to the Niké or Iris from the Parthenon pediments, figures which, on either side of the centre, appear to be communicating the news of the central scene to the seated or reclining figures at either angle of the pediment.<sup>2</sup> The bold curved lines of the sharply cut folds in this drapery illustrate the workmanship of the best period of Greek sculpture. Within these sharp ridges of curved folds there is again a fondness

<sup>1</sup> See pp. 157 and 187.

<sup>2</sup> See my *Essays on the Art of Pheidias*, p. 149.



for smooth, flat surfaces; while variety is given to these at the points where the drapery covers the rounded calf of the leg by the thinner flat relief folds, again showing the same system which we have noted in the torso (PLATE XXXVII.), and in the three draped fragments from the metopes (PLATE XXXV.). In fact, if we but remember the different dimensions, and the difference between a figure in the round and one in high relief, the workmanship in this fragment of drapery is quite the same as that of the fragment (PLATE XXXV. No. 3) which belongs to a metope in relief less than half the size of this pedimental statue. The pieces of undercut drapery that have been broken away behind and above the foot show, in both views here given, the use of the drill for the purpose of cutting away the unnecessary marble before the final finish. It will here be seen how several grooves remain, showing how the drill had been worked through behind the foot from either side.

**Nos. 3 and 4.** *Two views of a Fragment of Drapery covering portions of the Leg in a Female Figure from above the knee to above the ankle, from a Pediment.* Parian marble. This fragment, like Nos. 1 and 2, and for the same reasons there given, formed part of a pedimental statue. The figure itself was on the same scale.

Dimensions:—

Extreme height . . . . .	68. cm.
Extreme width . . . . .	60.
Thickness from middle of thigh . . . . .	29.
From knee to beginning of ankle . . . . .	35.
Extreme thickness of calf (inside fold) . . . . .	11.3

Whereas the previous figure rapidly moving forward was evidently meant to be seen in profile, the statue to which this fragment belongs was probably seen in the front view and did not stand absolutely erect. At first sight it suggests the seated attitude as we know it from the Parthenon pediments; but the figure could not have been seated, as the knee, though slightly bent, is not sufficiently bent for that attitude. The drapery is massed in deeply cut thicker folds between the legs, converging in almost parallel lines below the knee to the middle of the ankle, and then falling in divergent lines over either ankle. As seen in this fragmentary condition, the close massing of these folds, when parallel, looks somewhat monotonous; but this effect was undoubtedly relieved by the variety above and below this point when the figure was complete. The actual carving of these folds is the same as in Nos. 1 and 2. Though the edges of the folds have been broken away, it will be seen that in the side view, No. 4, the work is not so careful and highly finished in the back as in the front,—which is a further indication that this was a pedimental figure. For an acroterium above or on the side of the pediment the dimensions of the figure are too large.

PLATES XXXIX., XL.

*Additional Marble Fragments from the Metopes.*

I have here given a number of additional fragments that certainly belonged to the metopes, but which cannot be further identified and do not require detailed comment. One of these is pieced together out of six separate fragments, and gives some notion of the arrangement of the metopes, especially with regard to the background and the upper part. The hole drilled through the background on the right-hand upper corner of PLATE XXXIX<sup>a</sup>. is similar to that in PLATE XXX., and no doubt was the regular method of fixing these high relief slabs to the entablature. I have also (PLATE XL<sup>b</sup>.) given fragments of legs from the metopes. There is also one arm vigorously drawn back, which held a shield. Among them are also the backs of two heads, one with a helmet (PLATE XL<sup>c</sup>.).

PLATE XLI.

*Additional Fragments of Drapery and Feet, probably from the Pediments.*

I have here selected from the large mass of such fragments portions that seemed to me to have come from the pediments, since they belonged to larger figures worked in the round. These will further illustrate the style of the drapery, and their number will help to support our conclusion as



to the presence of such sculpture in the pediments. Of the larger feet here given (PLATE XLI<sup>b</sup>), several rest on plinths. The right foot on a plinth, covered with drapery over the instep, belonged to a life-size figure about the dimensions of the one to which the draped leg on PLATE XXXVIII. belonged. The varying thickness of the plinth ( $5\frac{1}{2}$  cm. in front,  $6\frac{1}{2}$  to 8 cm. in the back) makes it improbable that it belonged to an ordinary statue on a base. The foot, moreover, is tilted forward, resting chiefly upon the inside, and thus belonged to a statue in motion, the forward movement of which is further indicated by the curved direction of the folds in the drapery that covers the instep.

The other dimensions are:—

Length of fragment	. . . . .	31.5 cm.
Extreme height (including plinth)	. . . . .	20.
Depth	. . . . .	14.
Width of foot	. . . . .	9.3.

There is the fragment of a wrist and hand holding a piece of flying drapery. This is probably from the pediments, and belonged to a figure in which the cloak, fluttering in the wind from the back, is held up by one end in the upraised hand, as is often the case with Nikés. There is also here a small fragment of what appears to have been a marble vase. There is no reason to believe that the fragment of drapery in broad, flat folds with well-preserved painted border of a meander pattern, and below it spikes or rays, came from the pediments, while the other fragments probably did (Fig. 90).

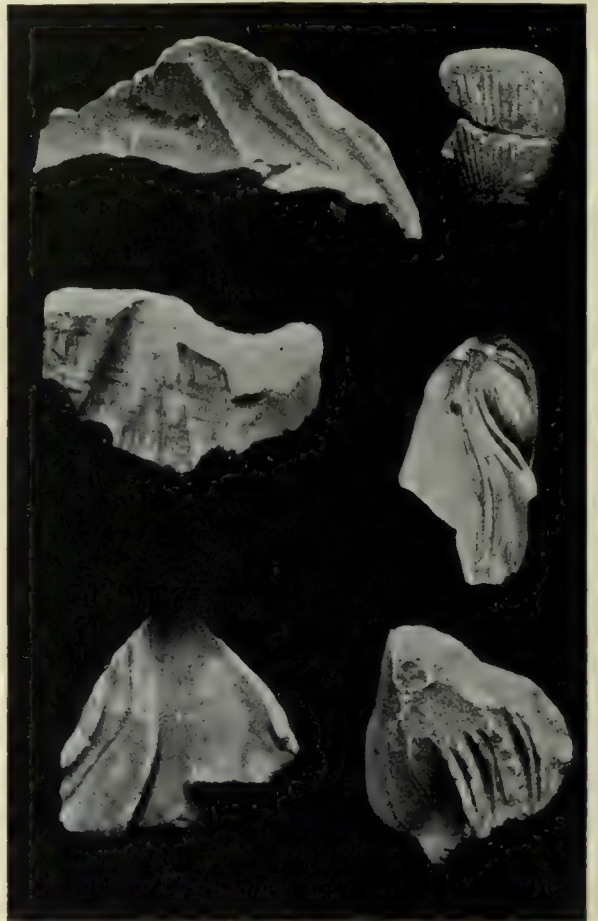


FIG. 90. — MISCELLANEOUS MARBLE FRAGMENTS FROM THE HERAEUM

THE ARGIVE HERAEUM

PLATE XXX

METOPE FROM THE HERAEUM















1  
YOUTH (PROFILE)



2  
YOUTH (FULL-FACE)



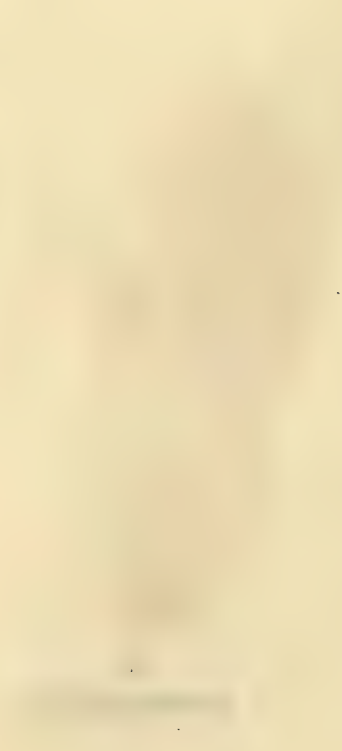
3  
AMAZON

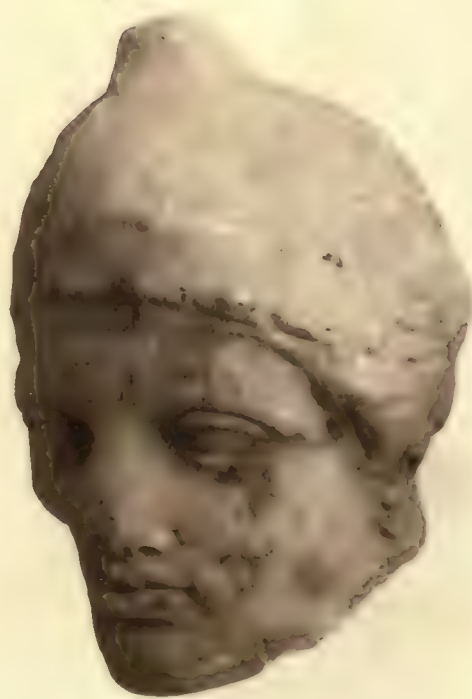
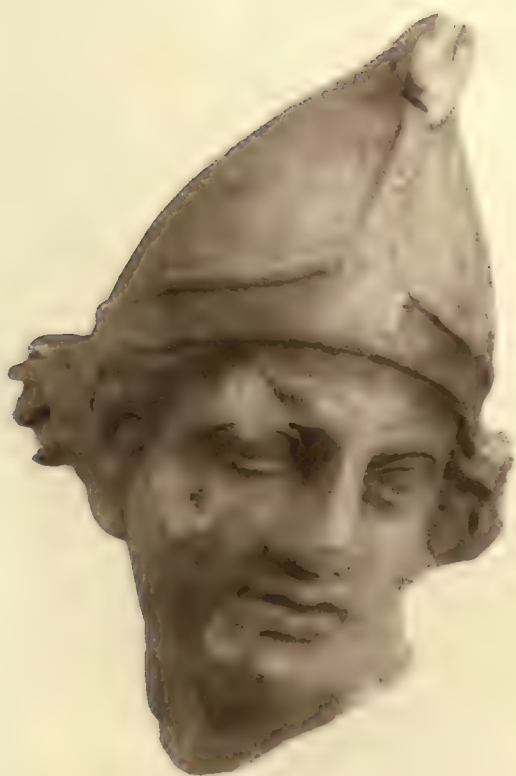
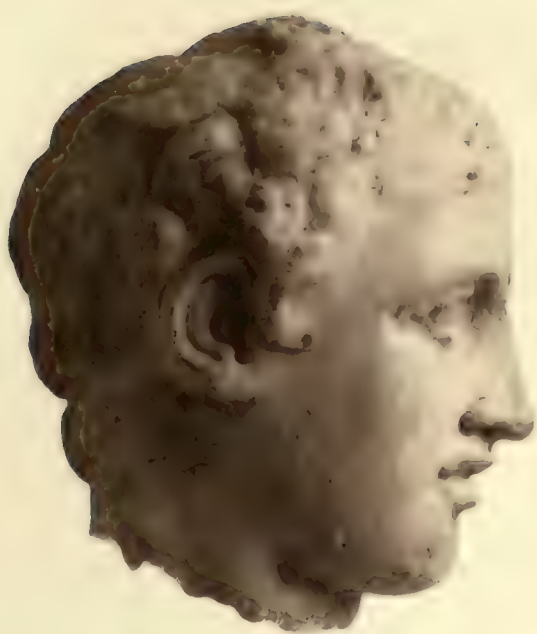


4  
WARRIOR

THREE HEADS FROM THE METOPES













1  
HEAD OF GIRL (RANGABÉ)



2  
HEAD OF GIRL (RANGABÉ)



3  
HEAD GRASPED AT HAIR

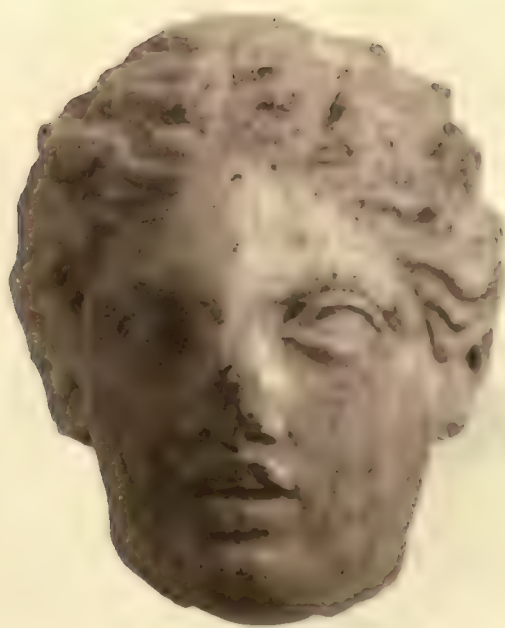
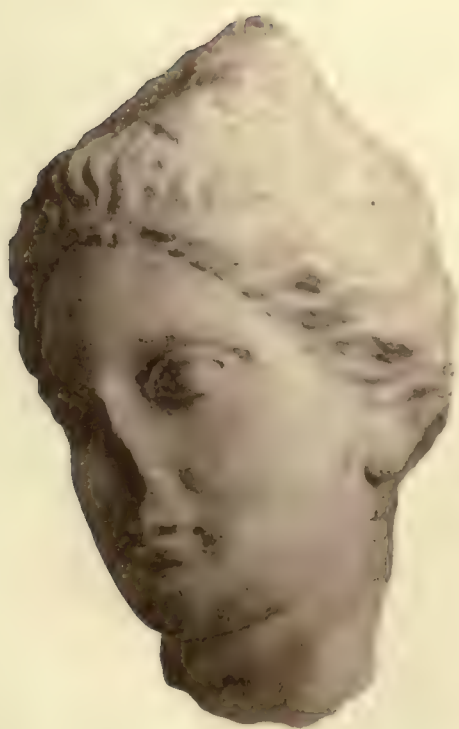
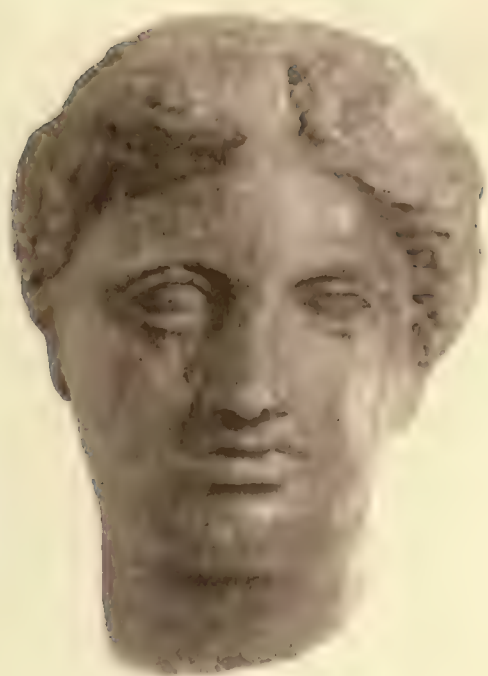


4  
GIRL'S HEAD.

THREE FEMALE HEADS FROM THE METOPES













1



2

HEAD OF ATHENE FROM THE METOPES



3



4

LOWER PORTIONS OF LARGER HEADS IN THE ROUND

HEADS FROM THE HERAEUM



1875

1875

1875

1875



1875









TORSO OF NUDE YOUTH FROM THE METOPES













1  
WARRIOR



2  
AMAZON



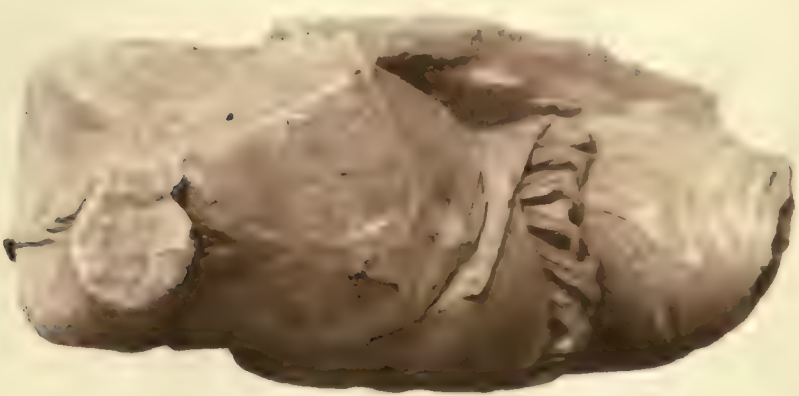
3  
FEMALE

THREE DRAPED TORSOS FROM THE METOPES



1900

1900-1901





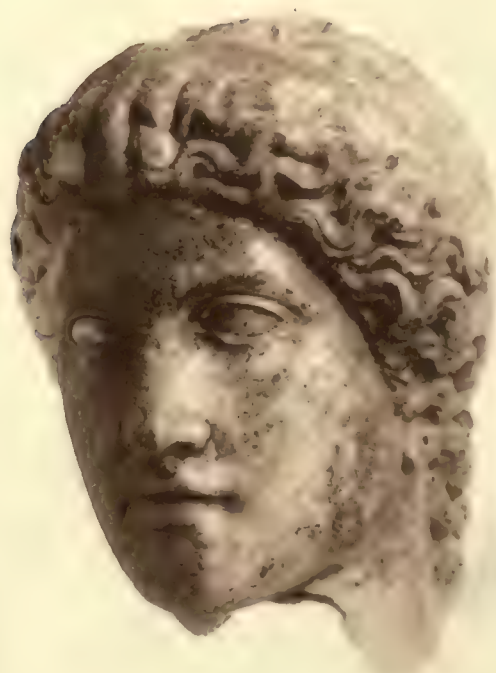
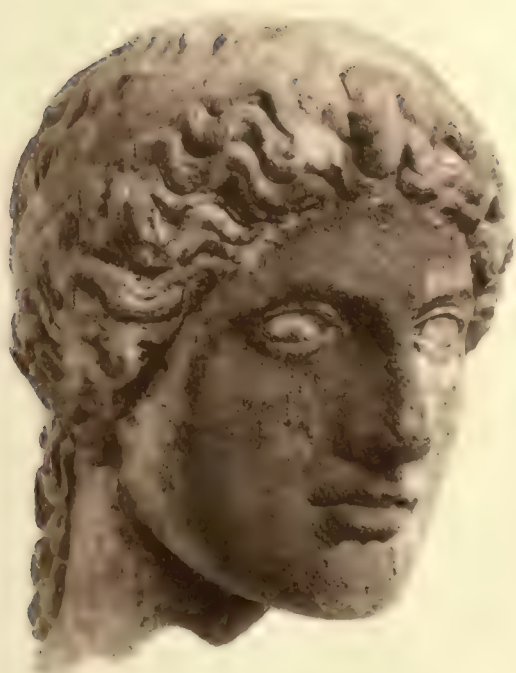




THREE VIEWS OF HEAD OF HERA











THE ARGIVE HERAEUM



FEMALE TORSO FROM THE PEDIMENTS





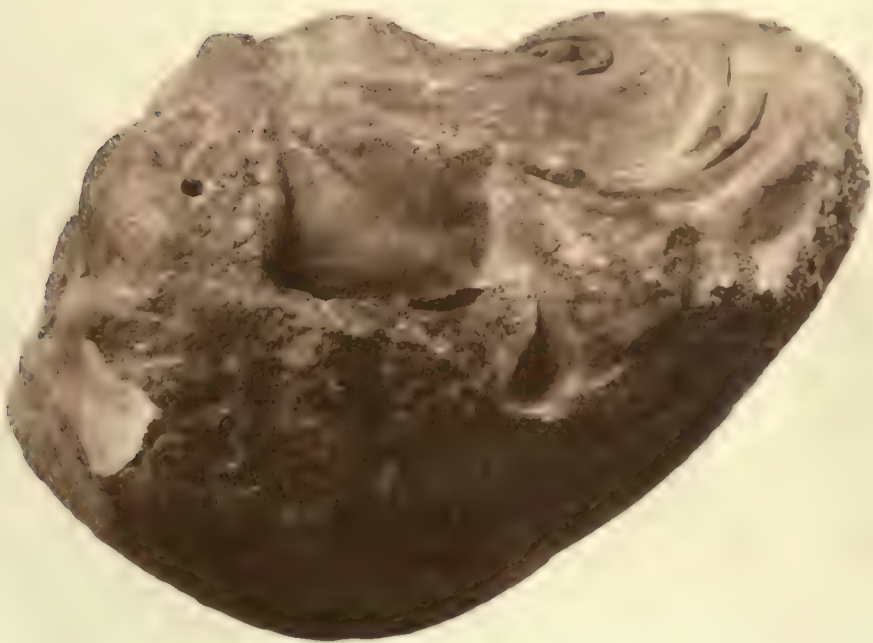




















PLATE XXXIX<sup>a</sup>



PLATE XXXIX<sup>b</sup>



PLATE XXXIX<sup>c</sup>



PLATE XXXIX<sup>d</sup>

MARBLE FRAGMENTS FROM METOPES







PLATE XL<sup>a</sup>



PLATE XL<sup>b</sup>

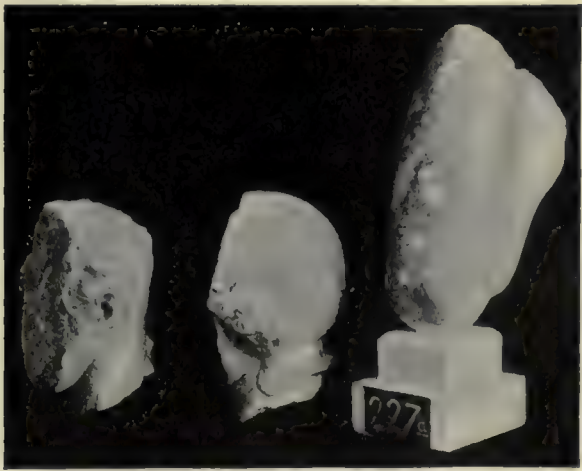


PLATE XL<sup>c</sup>

MARBLE FRAGMENTS FROM METOPES





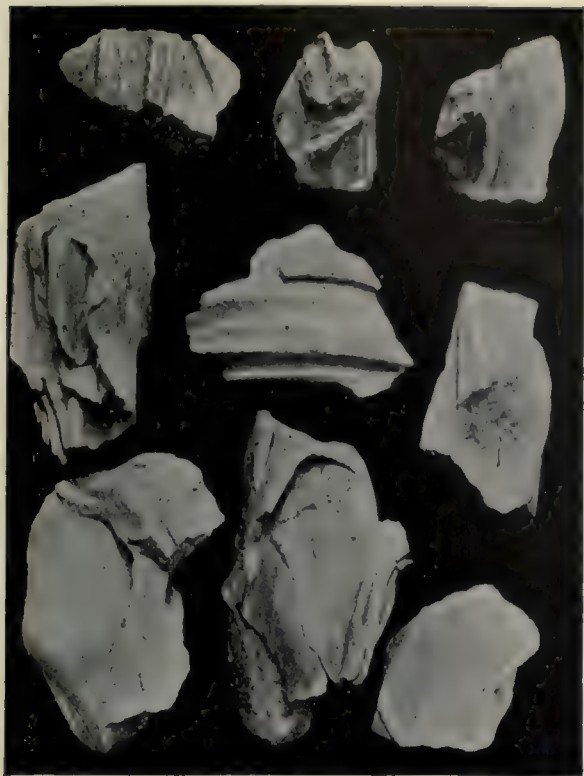


PLATE XLI<sup>a</sup>



PLATE XLI<sup>b</sup>



PLATE XLI<sup>c</sup>  
MARBLE FRAGMENTS FROM PEDIMENTS





INSCRIPTIONS FROM THE ARGIVE HERAEUM





# INSCRIPTIONS FROM THE ARGIVE HERAEUM<sup>1</sup>

## PART FIRST

### INSCRIPTIONS ON STONE

BY RUFUS BYAM RICHARDSON AND JAMES RIGNALL WHEELER

#### I.

ON a *poros* block in a wall between the Second Temple and the West Building. The block has a face 1.22 m. × .32 m. It was uncovered in the spring of 1895.

Κ Ε Ο Μ Α + Ο Ζ Κλεόμαχος.

The letters are in general .10 m. high, but *omicron* is exceedingly small. This inscription is probably older than No. II. The three-stroke *sigma* alone would carry its date to about 500 B. C.<sup>2</sup> *Kappa* is the most striking letter in form. At first sight one hardly notices that the upright bar projects above and below its junction with the oblique bars, which do not meet each other. Only on closer notice the upright bar is seen to project slightly. The wide gap between the oblique bars might seem to be a Thera feature, as the inscription from Thera given in *I. G. A.* 454 (Roberts, *Introd. to Greek Epig.* No. 4<sup>b</sup>) has a form in this respect almost exactly parallel. But almost the same peculiarity occurs in the Nicandra inscription (*I. G. A.* 407), and in that on the Apollo base at Delos (*I. G. A.* 409). In fact, we have almost a parallel at Argos itself in *I. G. A.* 31.

#### II.

This inscription holds the first place in importance among all the inscriptions on stone hitherto found at the Heraeum, both because it is one of the oldest and because it is so preserved that it may be read entirely. It is cut in a massive block of limestone which formed the upper part of the *stèle*, the shape of which is shown in the cut. Its dimensions are: thickness, .28 m.; height, from apex to the break at the bottom, .44 m.; height at right side, .37 m.; at left, .34 m.; breadth, .39 m. Below the inscription there is a rectangular depression .22 m. wide and .005 m. deep. The letters vary in

<sup>1</sup> The Inscriptions here discussed were, with a single exception (No. I.), transported to Athens during or at the close of the excavations, and are now in the National Museum. The block upon which No. I. is cut was too large to be removed.

Nos. III.-V., VII.-X., and XV.-XVIII., were first published by Professor Wheeler, in the *American Journal of Archaeology*, First Series, vol. IX. (1894), pp. 351 ff., and the remainder by me in the same periodical, First Series, vol. XI. (1896), pp. 42 ff., where I also published, in vol. IX. (1894), pp. 340 ff., the Stamped Tiles. (These articles are republished in the *Papers of the American School of Classical Studies at Athens*, vol. VI. pp. 272 ff., 261 ff., 299 ff.) In the present publication the order of the Inscriptions on Stone is approximately chronological, although the criteria are not in every case infallible. Otherwise little change has been made in the first form of publication.

The Inscriptions on Bronze (including the important archaic bronze tablet, first published by Dr. James Denison Rogers in the *American Journal of Archaeology*, Second Series, vol. V. [1901], pp. 159 ff.) are published by Mr. De Cou in the second volume, under Bronzes. Inscribed vases are published by Mr. Heermann in the same volume, in the chapter on Vases.

I wish to make acknowledgment here of the kindness of Professor Max Fränkel of Berlin, who sent me advance sheets of his *Corpus Inscriptionum Graecarum Peloponnesiacarum* (*C. I. G. P.*), in which he has treated the inscriptions from the Heraeum. In Nos. II. and XIV. I have especially profited by his suggestions. — R. B. RICHARDSON.

<sup>2</sup> It would fall into Roberts's (*Introd. to Greek Epig.* p. 117) "second period of Argive inscriptions."



height from .012 m. to .02 m. There is great irregularity in the spacing of the letters. The irregularity of turning lines 4 and 6 down at the ends is probably accounted for by the desire to begin the following lines with a new name.

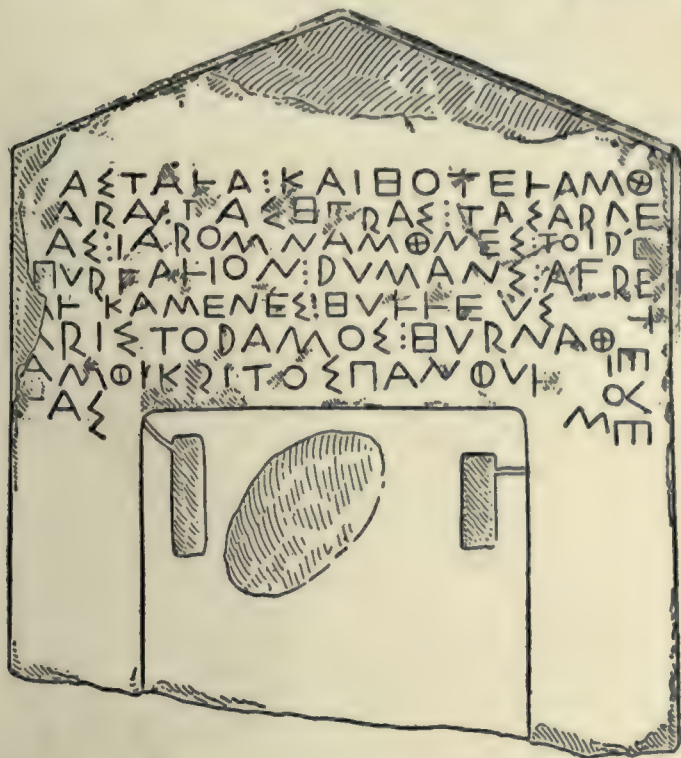
The stone was brought to the Central Museum from the Heraeum in the winter of 1893-94 with several others mentioned by Professor Wheeler as lying at the Heraeum.



Whether it was found in the excavations of 1892 or of 1893 I am not able to ascertain. Professor Wheeler did not see it when he examined the inscriptions in the spring of 1893.

The surface of the stone is slightly chipped at both edges. Room is found in this battered space for  $\epsilon$  at the beginning of line 1, but at the end there is no room for the  $\eta$  which might be expected. Neither can this  $\eta$  find a place at the beginning of line 2,

where there is only room for  $\iota$ . The rough breathing  $\Theta$  was apparently not used before  $\iota$ αρός as is seen by the clear case of  $\iota$ αρομνάμονες, line 3.<sup>1</sup> At the beginning of line 3,  $\iota$  must have been crowded in, since the diphthong is used in the very oldest inscriptions.<sup>2</sup> In line 4 the first letter must be  $\Pi$ , since there is no trace of a cross-bar for  $\Theta$ , which



ἵα στάλα : καὶ ὁ τελαμῶ  
 ἱ]αρά [τ]ᾶς [ἡ]ρας : τᾶς Ἀργε-  
 [ί]ας : ἱαρομνάμονες : τοῖδε  
 Πυρφαλίων : Δύμανς . . . ἀφρήτενι,  
 Ἀλκαμένης : Ὑλλεῖς,  
 Ἀριστόδαμος : Ὑρνάθιος,  
 Ἀμφίκριτος : Πανφύλ-  
 ας

would be the only alternative. The surface of the stone where such a bar would fall is perfectly preserved. The fourth letter is almost certainly  $\Phi$ , as the surface is smooth where the right-hand limb of a  $\Pi$  would naturally appear.<sup>3</sup> Furthermore, if such a limb had had the length which it has in Πανφύλας, line 7, it would have run into the  $\Lambda$  immediately below it. Πυρφαλίων is probably a diminutive from πυραλῖς, a kind of bird, which in Hesychius is written πυρραλῖς where the second  $\rho$ ho seems to point to an original *digamma*.

There are many interesting peculiarities of form in the letters of the inscription. The most striking is the second *omicron* of  $\iota$ αρομνάμονες, line 3.<sup>4</sup> It is evident at a glance that even apart from this *omicron*, which is probably an accident, we have an inscription venerable for its antiquity.  $E=\eta$ ,  $o=\omega$ ,  $\epsilon=\lambda$ , indeed run on in Argos to the end of the fifth century. But we find beside these usages  $\theta=\delta$ ,  $\rho=\rho$ ,  $\nu=\nu$ ,  $\phi=\phi$ .  $\Theta$ =rough breath-

<sup>1</sup> For  $\iota$ αρός as  $\psi$ ιλόν in Doric, see Ahrens, *Dial. Dor.* § 4. 3.

<sup>2</sup> *I. G. A.* 33, 42.

<sup>3</sup> The only other possibility, since *gamma* has the form  $\Lambda$ , line 2.

<sup>4</sup> This would pass without question for a simple error of the stone-cutter, but for the fact that an inscription connected with the frieze of the treasury of the Cnidians at Delphi, which probably belongs to the sixth century B. C., has two and perhaps three *omicrons*, crossed in the same way. *B. C. H.* XIX. (1895), p. 537. M. Homolle,

who had already pronounced in favor of an Argive artist for this frieze on the ground of the Argive *lambda* in the inscription, was inclined (*B. C. H.* XX. [1896], p. 599 f.) to see in this crossed *omicron* of our inscription a corroboration of his view. But since a careful scrutiny of all the other *omicrons* of our inscription fails to discover any cross marks, the interpretation of this one case as the survival of an Argive peculiarity seems precarious. Professor Fränkel, however, in his copy (*C. I. G. P.* 517), which is here reproduced, finds traces of these cross marks in the  $\Theta$  at the end of the line.



ing, the *digamma*, and perhaps, more important than all these, the punctuation of the words with three dots in perpendicular lines.<sup>1</sup> It may be added that M and N show very oblique lines in place of the later perpendicular ones. In the former letter the middle lines in several cases fail to meet at the bottom. *Alpha* also, which in the main looks tolerably late, has in one or two cases the cross-bar quite far from horizontal. Forms like Δύμανς,<sup>2</sup> also, and Πανφύλας<sup>3</sup> look old. In view of all these features, it would seem rash to put our inscription much, if any, later than 500 B. C.

The dialect is Argive Doric, pure and simple. The names Alcamenes and Aristodamus have also a good Doric ring to them.

The contents of the inscription is a list of four Hieromnemons, one from each tribe, the name of which is appended. 'Ιερομνήμονες was the usual name for the board having charge of temple affairs, not merely at Delphi, where the usage is perhaps best known, but in many other places as well. For the Heraeum it is seen also in VII., IX., and XIV. The inscription is interesting as affording almost the earliest mention of the names of the four Doric tribes.<sup>4</sup> These are sufficiently well attested in later times for Argos and for various Doric communities connected with Argos.<sup>5</sup> The editors of the inscription in the *Bulletin de Correspondance Hellénique*, vol. IX. p. 350, remark: "Jusqu'ici les inscriptions du Péloponnèse qui donnaient les noms des tribus argiennes dataient toutes de l'époque impériale; il y a quelque intérêt à les retrouver dans un document qui remonte, selon toute vraisemblance au III<sup>me</sup> siècle avant notre ère." But our inscription is at least two centuries older than the one in question.

The Hyrnethians are not so frequently mentioned as the other three tribes, and are regarded as a later addition to these original three tribes,<sup>6</sup> the name indicating perhaps an incorporation of a non-Doric element<sup>7</sup> into the community, a fact which was concealed under the myth of Hyrnetho, the daughter of Temenus, marrying Deiphontes. But the addition of the Hyrnethians cannot have been very late, for our inscription shows them in such good and regular standing that they are not even relegated to the last place in the catalogue, as is the case in the inscription just mentioned.

To the name of the Hieromnemon who is mentioned first is appended the word ἀφρήτευε. By good fortune this very word, without the *digamma*, is preserved in Le Bas, *Voyage Archéologique*, No. 1, of the inscriptions from Asia Minor (S. G. D. 3277).<sup>8</sup> The passage runs as follows: ἀρήτευε Λέων βωλᾶς σευτέρας. Le Bas translates: "Était

<sup>1</sup> We have become accustomed to find this method of punctuation in some of the very oldest pieces which are well known, e. g. Röhl, *I. G. A.* Nos. 5, 37, 41, 42 (the last three from Argos), 68, 119 (Olympia bronzes), 321, 322 (Galaxidhi bronzes).

<sup>2</sup> Ahrens, *Dial. Dor.* § 14, puts this retention of the combination *vs* as a peculiarity of Argos and Crete. Τίρονις is an instance of its survival to the present time (cf. Kühner-Blass, *Grammatik*, I. p. 257).

<sup>3</sup> In the Argive inscription given by Foucart in Le Bas, *Péloponnèse*, No. 116b, ἀ φυλὰ τῶν Παμφυλῶν (Foucart, Παμφύλαν), we have this form instead of the later form in *os*. Unless all single signs of age in alphabetic forms are illusive, our inscription must be at the very least half a century earlier than the one published by Le Bas, *Voyage Archéologique*, II. 3<sup>1</sup>, No. 1, and assigned to 417 B. C. Of this we shall speak later.

<sup>4</sup> The Hylleis are mentioned in the earlier bronze tablet, *Amer. Journ. Arch.* VI. (1901), pp. 161 ff.

<sup>5</sup> Gilbert, *Griech. Staatsalter*. II. p. 77, and the references there given. Also B. C. H. IX. p. 350; V. p. 217 (Cos); VIII. p. 29 (Calymnus).

<sup>6</sup> Steph. Byz. s. v. Δυμᾶν: — φυλὴ Δωριέων ἦσαν δὲ τρεῖς, Ἰλλεῖς καὶ Πάμφυλοι καὶ Δυμᾶνες ἐξ Ἡρακλέους, καὶ προσετέθη ἡ Ἵρνηθία ὡς Ἐφορος ἀ. It is worth noting that in the inscription given in Kabbadias, *Fouilles d'Épidaure*, No. 234, of the latter part of the third century, in a list of 151 Megarian names, only Hylleis, Pamphyli, and Dymanes appear. Perhaps the Hyrnethii had not been added in Megara. The old triple division appears in Herod. V. 68. Some would find it also in Δωριέες τριχάδικες, Hom. *Od.* xix. 177.

<sup>7</sup> Roscher, *Lex. Myth.* p. 982.

<sup>8</sup> This inscription from Smyrna, which records a favorable verdict of the Argives for the Cimolians in an arbitration between them and the Melians, may have been transported from Cimolus by some ship carrying Cimolian earth to Smyrna. See Le Bas, *ibid.*



prêtre du second sénat," and adds the following comment: "'Αρήτευε, qui, bien qu'il manque dans tous les lexiques, se déduit très-bien du même radical qu' ἄρητήρ et ἄρήτειρα, regardés tous deux jusqu'ici comme exclusivement usités dans le dialecte ionien."¹

In an inscription of the Hellenistic period from Mycenae, published by Tsountas in the *Ἐφημερίς Ἀρχαιολογική*, 1887, p. 156, lines 4 and 5, are given ἀρίστευε δαμιοργῶν Δελφίων. The face of the stone is very much defaced, so that certainty is hardly attainable, but Tsountas is now convinced that the real reading is not ἀρίστευε but ἀρήτευε. The *eta* is, to be sure, in this case very broad. Dr. A. Wilhelm, who decides that this alone can be the reading, reinforces it by the consideration that in the prescript of another edict published with this one, we have ἄρητ, which can be restored only as ἀρήτευε.

In all these instances one is tempted to connect the word with the stem *φρε*,² and make it designate the 'speaker,' or in other words the chairman of a board. We may then think of Pyralion as the president of the board of Hieromnemons.

The word τελαμών or τελαμώ, line 1, is difficult of explanation. We have come to associate the word with Caryatids and Atlantes, but it is almost certain that this association will not hold here. We shall probably come to the proper explanation by taking as our starting-point an inscription from Varna (*C. I. G.* II. 2056), at the end of which the following provision is made: τὸν δὲ ἱεροποιὸν ἀναγράφαι τὸ ψήφισμα τοῦτο εἰς τελαμῶνα, καὶ θεῖναι εἰς τὸ ἱερόν. With this may be associated another from Mesambria (*C. I. G.* 2053<sup>b</sup>), which closes with a like provision: τὸν δὲ ταμίαν ἀναγράφαντα τὸ ψήφισμα τοῦτο εἰς τελαμῶνα λευκοῦ λίθου ἀναθέμεν εἰς τὸ ἱερόν τοῦ Ἀπόλλωνος. One can hardly hesitate to say that τελαμών here appears to be the equivalent in Thrace for στήλη in Attica, where the latter word occurs constantly in the phrase prescribing the setting up of inscriptions, a phrase which except for this difference is exactly the same as in the two inscriptions cited. But our inscription mentions στήλη and τελαμών as two separate things, so that we have not yet arrived at a complete explanation. The case seems at first sight to be complicated somewhat by a third inscription from the same region as the first, and now preserved in the Museum at Odessa (*C. I. G.* 2056<sup>d</sup>), where the phrase is: [ἀναγράφαι εἰς στήλην λευκοῦ λίθου [καὶ] ἀνα[θεῖναι αὐτὴν ἐπὶ τελαμῶνος]. The inscription then proceeds to speak of [τὸ ἀνάλωμα εἰς τὴν] ἀνάθεσιν τοῦ τελαμῶνος.<sup>3</sup> It is this inscription which leads us to the light. Τελαμών is restored to its function as a support in a way which fits our inscription very well. In regions where marble was scarce, one may well suppose that an inscribed marble *stèle* might be inserted into a larger local stone, which might then not inaptly be called a τελαμών. It must be conceded that *C. I. G.* 2053<sup>b</sup>, where the τελαμών itself is of marble, affords difficulty. But it may be that even with the origin of the word τελαμών as here proposed, the two words came to be used in some quarters interchangeably.

It will be seen by the cut, p. 198, that something was inserted in our massive block. There are dowel-holes on the right and the left at the top of the rectangular depression, to which probably two others at the bottom, now broken off, corresponded. The one at the left measures .07 m. × .02 m., the one at the right .06 m. × .02 m.; both about .03 m. deep. These probably served to receive metallic dowels, inasmuch as they are provided with little channels for pouring in the lead when the inserted object was *in situ*, the channel on the left running obliquely to the upper corner of the depression, and that at the right

¹ *Voyage Arch.* II. 32, p. 6.

² Cf. *φράτρα*, *I. G. A.* Nos. 110, 112.

³ There seems to be no reasonable doubt that the readings given are correct, although much has been restored.

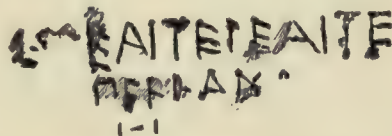


running horizontally to the edge of the depression. Besides the dowel-holes there is an equally deep irregularly round hole about .12 m.  $\times$  .07 m., which may have served also to hold some strengthening dowel. That the insertion was original, and not connected with some subsequent use of the block, is proved by the fact that the lines of the inscription are shaped with regard to it, coming in around it to the right and to the left. The object inserted cannot have been a statue, nor a *stele* to which this block served as a horizontal base, for in that case this inscription would have been hidden from view, except to one standing so as to read it sideways or bottom upwards. Probably we have the *τελαμών* into which was inserted a *stele* either of marble or bronze with an inscription of greater length and importance than the one which we have here. This served merely as a heading to the real contents of the inscription. It should be noted that at Argos marble was not at hand, and that most of the inscriptions found there were cut in the local limestone, which was a most unsatisfactory material. The veins of the stone and the cracks which come with age make the reading of these inscriptions an exceedingly difficult task.<sup>1</sup> In this case, even at a very early date, a good piece of marble may have been imported for an important inscription.

## III.

Inscribed on a small Doric capital and on a portion of its column found in the West Building (*cf.* Waldstein, *Twelfth Annual Report* of the American School, p. 34), near the third base of the inner row of columns, counting from the south (excavator's note). Diameter of column, 1 ft.; height of echinus, 4 in.; width of abacus, 1 ft. 9 in.; height of abacus, 4 in.; height of letters, about .8 in.

(a) is inscribed on the abacus and is difficult to read, owing to the damaged state of the surface of the stone. Professor Tarbell was the first to read line 1, but the defective squeeze which he used did not show the letters in line 2. It is possible that the letters Τ Θ Π Ι should be read before Π in line 2. This reading is due to Fränkel, *C. I. G. P.* 510, who restores Κλε[ ]τορι.



(a) ἐν Νε]μέαι Τεγέαι τε υ-υ-υ-υ-υ-  
τορι Πελλάν[α . . .

(b) is inscribed on the column, there being two letters in each flute, as is shown in the facsimile. The uneven stretching of the squeeze has caused the lines to appear not quite equi-distant from one another.



(b) Τιμοκλῆς μ' ἔθηκε

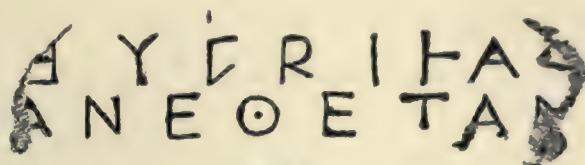
(a) shows clearly that the inscription is the dedication of some object by a victor in games (*cf.* Furtwängler, *Athen. Mittheil.* V. pp. 30 and 31, note 2). Similar inscriptions are quoted by Pausanias in his account of Olympia, and the excavations there have yielded some of the same class (*cf.* *Arch. Zeit.* 1876-1878; *Olympia*, V.). The fol-

<sup>1</sup> No. XIV. is a good example of this difficulty of reading, although the surface is not badly broken.

lowing numbers from the Anthology may also be cited for comparison: xiii. 5, 8, 14, 15, 16, 18, 19; xvi. (Planudea), 23, 24; vol. III. (Firmin-Didot), i. 23, 24, 30, 44, 50, 82, 89, 102, 106, 291; *Addenda* to vol. III. i. 86 b. Fränkel, *l. c.*, makes an interesting conjecture, which would bring this inscription into connection with the house of Theaeus of Argos, celebrated by Pindar in his tenth Nemean ode.

IV.

Found between the bases of the inner row of columns in the North Stoa (II, on the Plan, Fig. 2, p. 9) and on a level with them, at a point about one third of the length of the stoa, measured from the west end. The inscription is on a marble block measuring 10 in. by 10 in. by 3.6 in. The letters are about .7 in. in height. There is a round hole in the top of the block 1.6 in. in diameter. Of the name of the former dedicator of the two only a single upright bar of one letter is preserved.



Hyβρίλας  
ἀνεθέταν

The name Hybrilas is found in a list of Proxeni, *Bull. Corr. Hell.* 1891, p. 412, line 10 of the inscription, and in Bazin, *Archiv. de Miss. Scient.* II. 369. On the suffix -λας see Fick, *Griech. Personennamen*, p. 123, and Pape-Benseler, *Lex.* p. xxx.

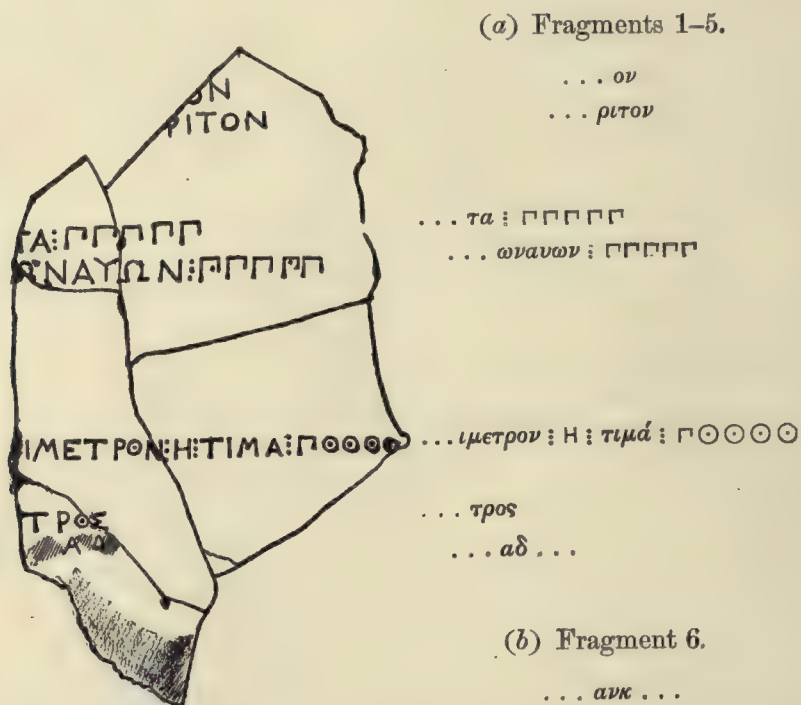
The really important feature in this inscription is the form  $\square$  = B. With the exception of a bronze plaque said to be from Hermione, but apparently of doubtful provenience, the Argive inscriptions of early date give but one example of the letter B. This occurs in the proper name Βορθαγόρας, which with others is inscribed on a stone that is built into the foundation of the eastern tower of the ruined castle on the Larisa at Argos (*cf. I. A. G.* 30 = *Dialekt-Inscripfen*, 3260 = Roberts, *Greek Epig.* 73). Here our copies give the form .

The plaque from Hermione has been published by Fröhner in the *Revue Archéologique* for 1891, II. pp. 50 ff., and, with extended comment, by Robert in the *Monumenti Antichi*, 1891, pp. 593 ff. Here beta occurs twice (lines 2, 6) in the word  $\square \bullet \vdash$  A. It should be observed that the upper lateral stroke is not at right angles with the vertical stroke, as is the case with the example from the Heraeum. There is, however, no essential difference in the forms. If the bronze plaque is not Argive, but represents a form of the alphabet in use at Hermione, we must suppose, as Fröhner has pointed out, that there existed there almost simultaneously two forms of the early alphabet, that of Argos (note the letter  $\vdash$  on the bronze plaque), and a form closely allied to the Lacedaemonian (*cf. Roberts*, p. 284, and Kirchhoff, *Studien*,<sup>4</sup> p. 160). It is more probable that the plaque is of immediate Argive origin, and this view, to which both Fröhner and Robert incline, is now shown to be almost certainly the correct one by the inscription from the Heraeum. The resemblance of this form of beta to that of the letter in several of the insular alphabets (C) and in the alphabet of Megara ( $\sqrt{\quad}$ ) has been remarked by Robert, *l. c.*



## V.

Inscribed on a white fine-grained limestone, which splits with conchoidal fracture. Found in the North Stoa, between the back wall and the inner row of columns. Six irregularly broken fragments of the stone have been found, five of which may readily be fitted together. These measure roughly 1 ft. by 8 in., the sixth fragment 3 in. by 1 in. The height of the letters is .4 in.



The inscription is extremely well cut, and the surface of the stone in excellent condition, so that the failure to discover more fragments is peculiarly to be regretted. It seems to have been an account of moneys paid out, possibly for building materials. We might restore ξύλων αῶν in line 4, but the inscription is so broken away at the left that conjectural restorations are not worth much. One Argive inscription gives Η = 100, Π = 50, ⊙ = 10, cf. Reinach, *Traité d'Épigraphie grecque*, p. 218; Dittenberger, *Hermes*, VII. p. 62 ff., comments on the inscription, which is also published as No. 3286 in the *Dialekt-Inschriften*; cf. Larfeld in Müller's *Handbuch*, I<sup>2</sup>. pp. 541 ff. Perhaps, however, ⊙ = *omicron*, as in other portions of the inscription, and signifies an obol. But how are we to read Π? If it means five or fifty drachmas in line 5, its repetition up to five places would surely be most unusual. Professor F. D. Allen suggested that it may be used to designate a coin of given value (cf. Reinach, *Traité*, p. 217, and note 3). Professor Allen also suggested the reading ὦνὰ ὑῶν in line 4, thus connecting the inscription with the purchase of sacrificial animals. Compare the sacrificial calendar from Cos, *J. H. S.* IX. pp. 323 ff., published also in Paton's *Corpus of Coan Inscriptions*. Line 5, however, seems rather to suggest the purchase of building materials. We might perhaps imagine in line 5 something that had a περίμετρον (δίμετρον or τρίμετρον seems difficult, since it involves the use of μέτρον as a linear unit) of 100, and in line 3 the ...τα might belong to some such expression as τοῖ τὰ διαστύλων θυρώματα (cf. lines 63-64 of the Epidaurean temple-inscription). This inscription is Fränkel's *C. I. G. P.*

No. 523, and his commentary should be noted. He would interpret the Η after -ιμετρον as ἡ(μίπλεθρον).

VI.

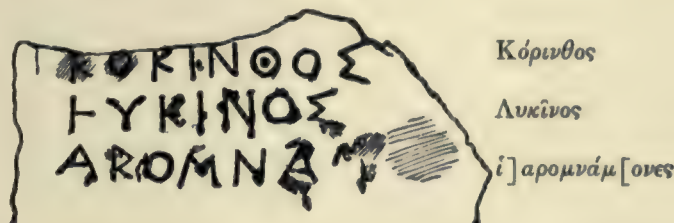
On a limestone tripod-base, found near the north wall of the West Building, with a diameter of .50 m. and a height of .41 m. The top surface shows four dowel-holes, a large square one in the centre, and three smaller rectangular ones for the legs, at distances of .23 m. apart.

Δ Ε Η Η Ι Ι Ο Ξ. Δέξιλλος.

Height of letters .03 m. to .035 m. The rounded *delta* throws this inscription also back towards the beginning of the fifth century. But its chief interest lies in the doubling of the *xi*. This is paralleled by the Boeotian Δέξιππος, Röhl, *I. G. A.* 150, and Δέξιππα, *C. I. G.* 1608, line 6.<sup>1</sup> The turning of *xi* on its side seems to be an Argive peculiarity.<sup>2</sup> It appears also on the inscription over the Cleonaeans who fell in the battle of Tanagra: *C. I. A. I.* 441. The cutting off of the upper half of the middle bar is, so far as I know, without precedent.

VII.

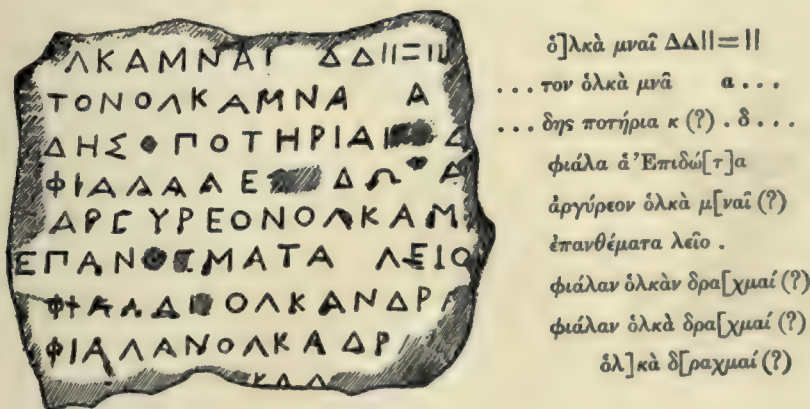
Found just to the south of the West Building among some architectural fragments. Inscribed on an irregularly broken fragment 1 ft. by 8 in. in size. The height of the letters is about .5 in. In the museum at Argos.



Possibly the stone formed the upper part of a *stele*.

VIII.

This inscription is described as having come to light "on the surface of the south side." The stone measures 5 in. by 6 in., and is broken on all sides. The letters are not deeply cut and the squeeze is difficult to read. The height of the letters is about .3 in.



<sup>1</sup> For other cases of gemination, see G. Meyer, *Gr. Gram.* § 227.

<sup>2</sup> Roberts, *Introd. to Greek Epigraphy*, No. 77.

λε[ία] δω . α . . .

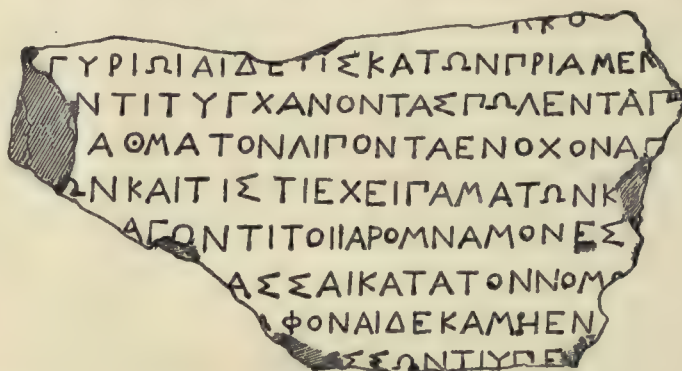


Fränkel's reading, *C. I. G. P.* 526, in line 4,  $\phi\iota\alpha\lambda\alpha\ \acute{\alpha}\ \epsilon\pi\iota\delta\acute{\omega}[\tau]a$ , I believe to be right. My squeeze appears to show the  $\tau$ , which I failed to observe before. His  $K[v]\delta[\acute{\omega}\nu\iota a$  in line 3 also seems probable.

The fragment is evidently part of an inventory of valuable objects which were stored in the temple or in some other building of the sanctuary. In line 1 the value of some object seems to be 22 minae, and perhaps 20 drachmas 2 obols; that is, if we may understand — = 10 dr. and 1 = 1 obol, as in the inscription which relates to the construction of the temple of Asclepius at Epidaurus. Lines 7 and 8, however, show that the word drachma was given in full, at any rate in the case of lesser values. The space preceding the A which stands at the end of line 2 shows no trace of any letter. It would seem, then, as if the value indicated were a single mina, unless A may possibly be taken as a numeral. It is so used apparently in line 106 of the architectural inscription of the temple at Epidaurus already referred to; but, so far as I know, the letter has never been interpreted there, and it is of no help in understanding the present inscription. The A rather suggests  $\acute{\alpha}\nu\acute{\epsilon}\theta\eta\kappa\epsilon$  or  $\acute{\alpha}\nu\acute{\alpha}\theta\epsilon\mu\alpha$  in this place (*cf.* the records of the temple of Apollo at Delos, *passim*, Dittenberger, *Sylloge*<sup>2</sup>, 588). The termination - $\delta\eta\varsigma$  looks like the ending of a dedicator's name, but unfortunately there is no means of determining how much has been broken off at the beginning or ending of the lines. In line 3 we might expect a word expressing an attribute of  $\pi\omicron\tau\eta\rho\iota a$  (*e. g.*  $\kappa\acute{\epsilon}\delta\rho\iota\nu a$ , which, however, is hardly possible, or  $\kappa\upsilon\delta\acute{\omega}\nu\iota a$  (Fränkel)). In line 6 the compound  $\acute{\epsilon}\pi\alpha\nu\theta\acute{\epsilon}\mu\alpha\tau a$  is, so far as I know, new, if we are to take it as signifying dedicated offerings. The use of the accusative  $\phi\iota\acute{\omicron}\lambda\alpha\nu$  in lines 6 and 7 has a parallel in lines 68 ff. of the records of the temple at Delos.

## IX.

An irregular fragment, broken on all sides, measuring 1 ft. 6 in. Height of letters about .4 in. I can give no note as to the exact spot where this inscription was found.



... νκο ...

$\acute{\alpha}\rho[\gamma\upsilon\rho\iota a \cdot \acute{\alpha}\iota\ \delta\acute{\epsilon}\ \tau\iota\varsigma\ \kappa a\ \tau\acute{\omega}\nu\ \pi\rho\iota a\mu\acute{\epsilon}\nu[\omega\nu$

... ντι τυγχάνοντας πωλὲν τὰ π ...

$\sigma\tau[\alpha\theta\mu\acute{\alpha}\ \tau\acute{\omicron}\nu\ \lambda\iota\pi\acute{\omicron}\nu\tau a\ \acute{\epsilon}\nu\omicron\chi\omicron\nu\ \acute{\alpha}\pi[\omicron\tau\iota\varsigma a\iota$

... ων καὶ τίς τι ἔχει παμάτων κ ...

$\acute{\alpha}\gamma\omega\nu\tau\iota\ \tau\omicron\iota\ \iota\alpha\rho\omicron\mu\nu\acute{\alpha}\mu\omicron\nu\epsilon\varsigma$

$\delta\iota\kappa[\acute{\alpha}\sigma\sigma a\iota\ \kappa a\tau\acute{\alpha}\ \tau\acute{\omicron}\nu\ \nu\acute{\omicron}\mu\omicron[\nu\ \omicron\ \dots$

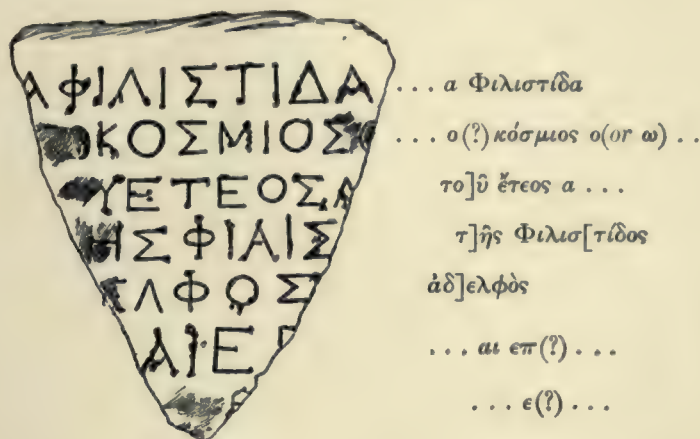
$\acute{\alpha}\delta\epsilon[\lambda\phi\acute{\omicron}\nu \cdot \acute{\alpha}\iota\ \delta\acute{\epsilon}\ \kappa a\ \mu\acute{\eta}\ \acute{\epsilon}\nu\ \dots$

$\delta\iota\kappa\acute{\alpha}[\sigma\sigma\omega\nu\tau\iota\ \acute{\upsilon}\pi\acute{\epsilon}[\rho$

Enough is left of this document to make the conjecture probable that it is a portion of a record of certain specifications touching the sale or lease of some piece of property. The *ιερομνάμονες*, line 6, whom several of the inscriptions from the Heraeum mention (see Nos. II., VII., XIV.), were doubtless the board which had charge of the negotiations. The restoration *δικάσσαι*, in line 7, was suggested by Professor F. D. Allen. That in line 9 seems to follow from it. Noteworthy is the uncommon word *παμάτων* in line 5. We have *τάππάματα* (*τὰ ἐππάματα*) in *Dialekt-Inschriften*, 488, lines 163-175. Compare *ἔππασις* (Index to *Dialekt-Inschriften*, Boötien), and the interesting compound *παματοφαγεῖσται* (*I. G. A.* 321, lines 42, 45 = *Dialekt-Inschriften*, 1478), also the Homeric *πολυπάμων* and Hesychius's *ἐμπάμων*. The simple word *πᾶμα* has a rare literary use. (See the Thesaurus, s. v.) In line 8 Frankel, *C. I. G. P.* 521, would restore *ἔγγρα]φον*.

X.

Inscribed on an irregularly broken fragment found just above the eastern wall of the West Building. The stone measures about 1 ft. 5 in. in height, 1 ft. 1 in. in width at the widest part, and 7 in. in thickness. The top, which is roughly hewn, has two small holes in it, 2 in. by 2 in., and 1 in. in depth. Except at the top the stone is broken off on all sides. The letters are from .6 to .8 in. in height.



In line 3 Fränkel, *C. I. G. P.* 532, would read *ἐμή]ννε τεός*. The small holes make one think of a dedicatory offering by Philistis or her brother, but it is useless to speculate in detail about the inscription.

XI.

Found in the West Building, close to the wall at the southwest corner, April 2, 1894. The stone is irregularly broken with an inscribed surface about .31. m. x .12 m., and is about 12 m. thick. The letters are .005 m. to .007 m. high, very regular, and remarkably well preserved. They have no ornamentation except that the strokes are generally broadened a little at the end. The inscription may belong to the third century, but probably to the fourth, and is a fine example of careful cutting.<sup>1</sup>

<sup>1</sup> Yet the first *alpha* in *Νάβαρχος*, line 14, has no cross-bar, which makes the words look like *Ἀγαθάναν Νάβαρχος*, an impossible combination. The first *epsilon* in *Δαμοσθένηαν* in the next line also lacks the middle stroke.



- 1 ΩΦΕΛΙΩ  
 ΞΩΚΡΑΤ  
 ΞΩΚΡΑΤ  
 ΤΕΛΛΕΑΛ  
 5 ΑΝΘΙΔΑΔΕ  
 ΞΩΤΗΡΙΔΑΙ  
 ΞΥΝΕΤΑΝΓΟΙ  
 ΩΙΒΙΟΝΞΩΚΡΑ  
 ΑΦΡΟΔΙΤΙΑΝΔΑΜ  
 10 ΜΙΚΥΛΙΩΝΑΞΩΠΑΤ  
 ΜΟΣΧΙΩΝΑΡΧΕΚΡ  
 ΠΙΣΤΑΝΦΙΛΩΤΙΞΠ  
 ΞΩΚΡΑΤΕΙΑΝΦΙΛΩΤΙ  
 ΓΑΘΩΝΑΝΛΥΑΡΧΟΣ  
 15 .. ΜΟΣΘΕΝΕΙΑΝΝΙΚΟΙ  
 ... ΤΟΚΡΑΤΕΙΑΝΕΠΙΚΡΑ  
 .... ΟΝΘΕΡΞΙΩΝΔΑΙΦ  
 ... ΝΑΝΦΙΛΟΚΡΑΤΕΙΑΠΑ  
 .... ΑΝΕΠΙΚΛΗΣΔΙΦΩΝΥΞ  
 20 ..... ΔΑΜΟΣΘΕΝΗΣΔΙΦΩΝ  
 ΞΥΡΑΠΑΙΟΝΙΣ  
 ..... ΝΑΡΙΣΤΟΠΟΛΙΣΚΕ  
 ..... ΚΕΤΟΣΚΛΕΙΟΛΙΣ  
 ..... ΞΑΝΑ  
 25 ..... ΙΛΥ  
 1 Ωφέλιω[να  
 Σωκράτ[ειαν  
 Σωκράτ[ειαν  
 Τελλέα Δ  
 5 Άνθίδα Δο  
 Σωτηρίδα Ι  
 Συνέταν Γοι  
 Σώβιον Σωκράτεια  
 Άφροδιτίαν Δαμ[οκράτεια  
 10 Μικυλίωνα Σωπα[τρίς  
 Μοσχίωνα Άρχεκ[ράτεια  
 Πίσταν Φιλώτις Πο  
 Σωκράτεια Φιλώτις  
 [Α]γαθώνα Ναύαρχος  
 15 Δα]μοσθένεια Νικομ[άχη  
 Άρι]στοκράτεια Έπικράτεια  
 .... ον Θερσίων Δαϊφ[ότης  
 .... ναν Φιλοκράτεια Παλ  
 .... αν Έπικλ[ης Διφωνυσ[ίαν  
 20 ..... Δαμοσθένης Διφων[υσίαν  
 ..... Σύρα Παιονίς  
 ..... ν Άριστόπολις Κε  
 ..... κετος Κλε[όπ]ολις  
 ..... σαν Ά  
 25 ..... ιλυ

We have here simply a list of names, some in the nominative and some in the accusative. On the left, where the original edge of the stone is preserved, we seem to have an accusative at the beginning of each line. In the first instance in which we have two consecutive names, line 12, the second name is in the nominative. In line 14 it is the same, and so on apparently to the end. We cannot determine whether the third name is an accusative, thus making a regular alternation, until we reach line 21. This line, however, is peculiar in having a little blank space each side of the preserved letters. It is possible that before Σύρα an accusative stood, separated from it by an interval slightly greater than usual. Παιονίς (which has a space after it for more than two letters), is doubtless an epithet of Σύρα, and so does not break the alternation. Line 23 is the only one which seems to do this, since -κετος is probably the ending of a name in the nominative; and Κλεόπολις, which follows, seems to be a second name in the nominative. It is also difficult to get a name short enough to precede ]κετος supposing this were the ending of an accusative, when only seven letters in all are lacking.

The inscription may be a record of emancipation of slaves, with the slaves' names in the accusative, and the owners' names in the nominative. In such documents, at Delphi and elsewhere, women's names generally outnumber men's names by more than two to one.<sup>1</sup> In this list the proportion of women's names is even larger.

While some of the names are unusual, none of them are strange enough to be remarkable. Ὀφελίων is interesting as occurring again in different shape in No. xiv. It is perhaps a favorite in Argolis, as it appears in *Dialekt-Inschriften*, 3269, 3341, 3401.

The use of the *digamma* in Διφωννσ[ίαν], which occurs twice, and the Doric ending *a* for the first declension names, show some retention of old style, and caution us against assigning too late a date to the inscription.

## XII.

Found towards the close of the excavations of 1894. Of irregular shape, about .40 m. long and .19 m. broad, .08 m. thick. Letters of the same size as those of Nos. xi., xiii. (.005 m. to .007 m.), and almost of the same form.<sup>2</sup> The surface is so badly worn away that but little can be made of the inscription, and that little only on the left side.

Only a few proper names result from the most careful scrutiny, hardly enough to make it profitable to add a transcription in small letters. Since the differences between the letters of this inscription and those of Nos. xi., xiii., were at first hardly discernible, and since this stone had no original edge preserved, it seemed as if it might belong to the same inscription. The thickness of the stone would not be an insuperable objection, as both fragments are extremely uneven at the back. Furthermore, while most of the names which can be made out with certainty are in the nominative, we have Χάριτα in line 13 and an accusative ending apparently at the beginning of line 20. Even the two consecutive nominatives in line 5, which may be regarded as certain, although this is one of the most worn places of the stone, are paralleled in No. xi., as we have seen. Some of the names are also the same, as Ἀριστόπολις (5), Ἀγάθων (14), perhaps Κλεόπολις (19, 21), and in different form Ὀφελίων (20).

But even the slight differences in the letters mentioned above, taken together with the different thickness of the stones, make it safer to treat the two pieces as belonging to different inscriptions.

<sup>1</sup> Smith, *Dict. of Antiq.* II. 61<sup>3</sup>.

<sup>2</sup> M is somewhat broader, with the upright bars more perpendicular. O is somewhat smaller.





We seem to have genitives also in this inscription, as *-ωνος* (2), *Ἀράχνας* (23), *κλειδα* (18). Of these, however, only the last seems reasonably certain, as the first may be *-ονος*, a nominative ending, and in line 23 we may have *Ἀράχνα* followed by a name beginning with *Σ*.

Line 22, which shows at the beginning several letters which are hard to combine into any proper name, may contain something else than names, but this is doubtful. After this line there is space for another, which was left blank.

XIII.

A small irregular piece, .07 m. from top to bottom, .18 m. wide, of about the same thickness as No. XII. The letters also are identical in form, so that in spite of different weathering<sup>1</sup> it is not unlikely that it formed a part of the same inscription. It was found at the close of the work in 1894. A small piece of the surface at the right, about .04 m. square, is now detached. But the two fragments fit so perfectly that there is no doubt that they belong together.

Κ Ε Ι

! M A X

Ι Κ Ι Ο Ν Α Ρ Ι . . . . .

Φ Ι Λ Ω Ν Ι Δ Α Ν Φ Ι . . . . . Ι Ο

Π Ι Σ Τ Α Ν Α Ν Θ Ι Π

Ρ Υ Ξ Ι Π Π Ο Ν Ξ Ο

Ν

Κ Ε Ι

Φυλ]άκιον Ἀρι[στώ Ἀρχ]εμάχ[ου

Φιλωνίδαν Φι[λωτίς] Χο

Πίσταν Ἀνθίπ[που

Χ]ρύσιππον Σω

*Ἀρχεμάχου* in line 2 is suggested by the same name in XII. 3, although the space is rather scanty for so many letters. The two compounds in *ἵππος* are matched by the two in XII. 17, 19. *Πίσταν* occurs in XI. 12.

XIV.

The stone is very streaked limestone, .11 m. thick, irregularly broken. The greatest length of inscribed surface, from top to bottom, is .30 m.; greatest breadth, .23 m. It is not finished off evenly at the top, where the heading shows that we have the original edge. The letters are .01 m. high. A remarkable feature of the inscription is that in the top line where the stone is chipped off the letters are cut down into the breaks along the edge.

1 Μ Ν Α Μ Ο Ν Ε Ξ Η Ρ Α Ξ Ο Ι Ε Ι

Α Ρ Ι Ξ Τ Ο Κ Ρ Α Θ Η Ξ Τ Ι Μ Α Γ Ο Ρ Ο Υ

Τ Ε Ο Ξ Τ Η Μ Ε Ν Ι Δ Α Ξ Ι Ξ Τ Ρ

Γ Υ Ε Υ Ξ Α Ν Τ Α Ξ Ε Ι Ξ Α Υ Τ Ο Υ Ξ

5 Α Ρ Κ Ε Ι Δ Α Ε Ρ Μ Ο Γ Ε Ν Η Ξ Α Ε Μ Α

Λ Α Ρ Α Β Ο Υ Α Ν Δ Ρ Ι Κ Ο Ξ Α Ε Φ Α Η Ν

Ξ Ι Α Ξ Α Ε Φ Α Η Ν Α Ξ Δ Α Μ Ο Ι Τ Α

Ε Α Ι Ξ Χ Ρ Ω Ν Ο Ξ Π Ω Λ Α Θ Ε Ε Ξ

Α Ρ Χ Ι Δ Ο Ξ Α Ε Α Ν Τ Ι Π Α Τ Ρ Α

10 Τ Ο Ξ Ν Α Υ Π Λ Ι Α Α Α Ρ Μ Ο Ν

<sup>1</sup> This piece is so reddened that it seems at some time to have been exposed to fire.



ΝΑΞΥΑΔΑΙΦΙΛΙΞΤΩ ΙΑΤ Κ  
 ΝΙΚΗ ΙΑΤ ΚΛΕΥΚΡΑΤΕΟΣ  
 ΦΙΛΟΝΙΚΑΣΞΜΙΡΕΙΔΑΙ  
 ΙΑΕ ΘΕΟΔΟΣΙΑΞΡΩΜΑΙΑ  
 15 ΑΓΑΘΩΝΟΣΞΕΝΑΡΓΕΙΝ  
 ΞΕΝΑΣΞΚΕΡΚΑΔΑΙΘΙΟ  
 ΙΟΚΛΑΑΡΙΞΤΩ ΙΑΕ  
 ΦΙΛΙΞΤΙΩΝ ΙΑΕ ΘΙΟΦΑΝ  
 .ΡΙΤΥΛΛΑ ΛΥΚΟΦΡ  
 20 .ΡΑΤΕΟΣΞΝΑΥΠΛΙΞ  
 ....ΔΙΩΝΥΞΟΥΚ  
 ....ΕΙΑΞΔΟΔΟΡ

- 1 'Ιερο]μνάμονες 'Ηρας οἱ ἐ[πὶ  
 'Αριστοκράτης Τιμαγόρου  
 τεος Τημενίδας 'Ιστρ [ἐγ-  
 γνεύσαντας εἰς αὐτοὺς [ἀπελευθέρων τῶνδε  
 5 'Αρκειδα 'Ερμογένης ΙΑΕ Μα  
 Λαράβον 'Ανδρικός ΙΑΕ Φαήν[ας  
 σίας ΙΑΕ Φαήνας Δαμοιτά[δας  
 ε Αἰσχρωνος Πωλαθέες  
 'Αρχίδος ΑΕ 'Αντιπάτρα  
 10 τος Ναυπλία ΑΑ 'Αρμον[ίας [Φαη-  
 νας 'Τάδαι Φιλιστώ ΙΑΕ Κ  
 νίκη ΙΑΕ Κλευκράτεος  
 Φιλονίκας Σμιρεῖδαι  
 ΙΑΕ Θεοδοσίας 'Ρωμαία[s  
 15 'Αγάθωνος ἐν 'Αργει Ν  
 ξένας Κερκάδαι Θιο [Δα-  
 μοκλᾶ 'Αριστῶ ΙΑΕ Σ  
 Φιλιστίων ΙΑΕ Θιοφάν  
 Κ]ριτύλλας Λυκόφρ[ων [Κλευ-  
 20 κ]ράτεος Ναυπλία  
 . . . . Διωνυσίου Κ  
 . . . . είας Διόδωρ[ος

This inscription seems to be a list of certain persons who had become security to the Hieromnemons for something. In my first publication I ventured to make the sign ΙΑΕ, which does not occur elsewhere, a numeral sign, although I could not assign it a value. The fact that in line 9 the form ΑΕ, and in line 10 ΑΑ, appeared made this supposition seem plausible in view of the variety of numeral systems in the Argolid.<sup>1</sup> But this explanation is so uncertain that I feel obliged to leave the meaning of the sign or signs doubtful. It seems clear that certain persons designated by the nominative case become sponsors for others designated by the genitive case, probably freedmen.

Probably we have lost at least half of the inscribed surface. The first line must have contained after the ἐπί at least a proper name of some magistrate who gave his name to the year. This would make a line of about thirty letters. If in the next lines we have

<sup>1</sup> Collitz, *Dialekt-Inschriften*, Nos. 3286 (Argos), 3318 (Hermione). See also Dittenberger in *Hermes*, VII. (Nemea), 3325 (Epidaurus), 3362 (Troezen), 3384, 3385 pp. 62 ff.

the names of *four* Hieromnemons, as we might expect from No. II., and the names of their fathers, with some such formula as ἀνέγραψαν τοὺς ἐγγυεύσαντας,<sup>1</sup> even forty letters to the line will not suffice. It is of course possible that there were only three Hieromnemons at the time of this inscription. But line 5, to go no farther, with a name like Ματροδώρον, and another name with the usual sign (for the order, up to line 9, seems to be nominative, sign, genitive), would make a line of forty letters. It is the lack of such a large part of the inscription that makes the interpretation full of difficulties. In line 9 the order appears to be reversed, the genitive coming before the sign and the nominative after it.

Πωλαθείες (8), ῥάδαι (11), Σμυρεῖδαι (13), Κερκάδαι (16), seem to designate guilds or possibly *gentes*, and may signify, according to Professor Fränkel's suggestion, 'Horsebreeders,' 'Swineherds,' 'Polishers,' or 'Sharpeners' (literally, 'users of emery'), 'Weavers.' The designations recall the names given by Clisthenes to the tribes at Sicyon (Herod. V. 68).

That the inscription is from Roman times may be inferred from the occurrence of Ῥωμαία[ς], although the forms of the letters alone would not have led us to ascribe it to so late a period.<sup>2</sup> Many of the letters are apicated.

XV.

Inscribed on a stone built into the wall of one of the structures that adjoin the North Stoa. The wall is not of the best construction, and the inscribed stone was undoubtedly brought from elsewhere and built in at a date later than that of the cutting of the inscription. The dimensions of the stone, which has apparently been cut down to fit into its present position, are 2 ft. 11.5 in. by 1 ft. 11.5 in., and the upper line of the letters is 3.5 in. below the top of the stone. The height of the letters is about 3 in. The upper left-hand corner of the stone is broken off. The inscription is very clearly cut. The apparent dot in the first O is almost certainly only a break in the surface of the stone. The form of *sigma* is noteworthy in an Argive inscription.

ΔΙΦΟΝΥΣΙΟΥ

Διφονυσίου

Fränkel, *C. I. G. P.* 512, reads Διφονυσίου on account of this form occurring in Nos. XI. line 20, and XIV. line 21.

Possibly this may be a patronymic genitive in a dedicatory inscription.

XVI.

Inscribed on a much-broken block of stone measuring 2 ft. 3 in. by 2 ft. by 1 ft. 3 in. (height). Found on the upper terrace just south of the remains of the earlier Temple.

ΑΙΙΑΜΙ

Ἀρτάμι

For the form see Foucart in Le Bas, *Explicat.* No. 109a. The inscription there published reads, Πρωτίων Ἀρτάμι. Foucart compares the forms Σαράπι, Ἰσι, Ἀνούβι (*cf. Mittheil.* IV. p. 148, No. 508; *Dialekt-Inschriften*, 3283).

<sup>1</sup> ἐγγυεύω, though not given in the lexicons, is contained in Wescher et Foucart, *Inscr. de Delphes*, No. 139.

<sup>2</sup> The rounded epsilon which appears in the combination [ΑΕ] does not appear in the body of the inscription.



## XVII.

Found in the same place as No. vi. The inscribed stone is of irregular shape, but the measurements may be roughly given as 11 in. by 5 in. The height of the letters is about 1.2 in. The dot in the O is not entirely certain.

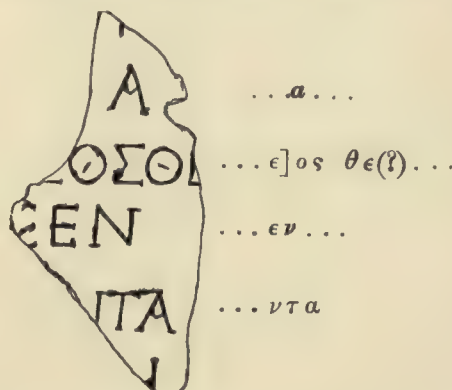


. . . o (or ω) ν ἄ ν [έ θ η κ ε (?)

The squeeze fails to show any trace of the line after ν which Fränkel notes, *C. I. G. P.* 509.

## XVIII.

Inscribed on a very much broken fragment measuring roughly 9 in. by 5.4 in. The letters are about .9 in. in height. In line 2 the fourth letter is very likely, though not quite certainly, *theta*; and indeed the second letter of the line, so far as form goes, might be the same. In line 4 perhaps we should read τ α instead of ν τ α.



Fränkel, *C. I. G. P.* 533, restores Κ λ ] ε ο σ θ ε - | ν [ - - - ἀ ν έ σ τ η σ ] ε ν.

## XIX.

Μ Ο

On a fragment of a round base of limestone which must have had a diameter of about 1.50 m. with very elaborate moulding. The inscription is on a band .11 m. broad. Above this is a projecting lip now badly shattered, once .03 m. thick and projecting at least .02 m.; below is a concave moulding .01 m. broad, then a convex one, .02 m. broad; then a band .05 m. broad with a double maeander pattern. The shape of the fragment is like that of a sector of a cylinder, the inscribed surface, i. e. the arc, measuring .24 m. Height of letters, Μ .025 m., Ο .02 m.

We have the beginning of the inscription, since there is a space of .14 m. before the Μ, whereas the letters Μ and Ο are only .05 m. apart. It is useless to attempt a restoration. The inscription was probably brief, since other pieces of the base lying at the Heraeum have no letters.

## XX.

Two marble fragments, rough at the back, .09 m. thick, both irregularly broken, (*a*) about .22 m. × .22 m.; (*b*) about .15 m. × .25 m. (height): letters in both .06 m. .07 m. in height, and with large apices.

(*a*)    Υ   Α   Ι   ς  
          Τ   Ο   Ρ   Ο

(*b*)    Υ   Σ   Ε

Whether (*a*) is properly first in order of succession one cannot say, as a reconstruction is not to be made out of such scanty fragments. All we can say is that (*a*) certainly yields in the second line Αὐτοκρά]τορο[ς and in the first line perhaps 'Αν[τωνίνου. (*b*) yields Σε[βαστόν. It is in itself highly probable that the worship at the Heraeum had a period of revival under Hadrian and the Antonines.



## PART SECOND

### STAMPED TILES FROM THE ARGIVE HERAEUM

BY RUFUS BYAM RICHARDSON

CLAY that is to be fired presents an opportunity easily to inscribe a name so that it shall become more durable than one laboriously chiseled in stone. This opportunity is one too tempting to be neglected, and from the time when the Assyrians stamped their bricks, down to the present day, it has been improved. Tiles and bricks made by Romans, and impressed with the names of the legions by which and for which they were made, have been found all over Western Europe.<sup>1</sup> At first less attention was paid to Greek material of this character because the material itself has been less abundant. Birch (*Ancient Pottery*, p. 116 ff.) gives a list of the examples known at the time of the publication of that work; but that was nearly forty years ago, and even the second edition is more than twenty years old. In this interval many additions have been made to our stock.

A partial list of these additions was drawn up by Paris<sup>2</sup> in 1892, including contributions from Athens, Piraeus, Corinth, Mantinea, Tegea, Lycosura, Sparta, Olympia, Dodona, Tanagra, Thisbe, Metapontum, Velia, besides a considerable quantity from Elatea. This list might be greatly enlarged. The two great excavations of Olympia and Delos were, it is true, unfruitful in this sort of material; but Pergamon<sup>3</sup> has yielded one hundred and twenty-four different stamps, with sometimes forty impressions from the same stamp. The excavations at Megalopolis gave another smaller but interesting addition;<sup>4</sup> Chios,<sup>5</sup> Magnesia,<sup>6</sup> Tralles,<sup>7</sup> and Eretria<sup>8</sup> also furnish their contributions. Epidaurus has several tiles with the stamp

Α Ν Τ Ω Ν Ε Ι Ν Ο Υ °

In the recent excavations at Corinth were found several tiles bearing the abbreviated title of the Roman city, C O L. I V L. C O R.<sup>10</sup>

Of especial interest is a tile-fragment from the temple of Apollo at Amyclae, now in the Central Museum at Athens, and not yet published. On this the stamp has been impressed twice. The first time it was done so carelessly that only the top line "took." We read Α Π Ο Δ Δ Ω Ν Ο Ζ. It is perfectly evident, however, from the breadth of the indentation in the clay, that another line ought to be there. But by good luck the workman saw his failure, and planted his stamp again about an inch higher up, this time squarely. The larger portion of the lower line has been spared. Just at the top of the fragment we read:—

Α Α W I

Μ Υ Κ Α Α Ι Ο Ι

<sup>1</sup> Marini, *Inscrizioni doliari*; Birch, *Ancient Pottery*, at the end.

<sup>2</sup> *Élatée*, pp. 110 ff. In the *Bibliothèque des Écoles françaises d'Athènes et de Rome*, Fascicule 60<sup>me</sup>.

<sup>3</sup> *Alterthümer von Pergamon*, VIII. 2, pp. 393 ff.

<sup>4</sup> *Excavations at Megalopolis*, p. 140, and *Jour. of Hell. Studies*, XIII. pp. 332, 336.

<sup>5</sup> *Athen. Mith.* XIII. p. 182.

<sup>6</sup> *Ibid.* XIV. pp. 103 f.

<sup>7</sup> *B. C. H.* X. p. 327.

<sup>8</sup> *Eleventh Annual Report of the American School of Classical Studies at Athens*, p. 40.

<sup>9</sup> Kabbadias, *Fouilles d'Épidaure*, p. 107, No. 247.

<sup>10</sup> *Am. Jour. of Arch.* Second Series, I. (1897), p. 111.

Hardly less interesting is a brick from Sparta stamped:—

ΠΑΙΝΘΟΙΔΑΜΟCΙΑΙΚΑΝΟ  
ΘΗΚΑCΕΠΙΚΑΛΛΙΚΡΑΤΕΟC  
ΕΡΓΩΝΑΝΙΚΑCΙΩΝΟC<sup>1</sup>

It is not necessary, however, to give here a complete catalogue of the material which has been found in recent years and has received casual mention in various periodicals. Enough has been said to show that certain stamped tiles found at the Argive Heraeum are far from being an isolated phenomenon in Greece. Of these tiles, seven fall at once into a class:—

- (a)  $\Xi \Omega \text{ K } \Lambda \text{ H } \Xi$  .
- (b)  $\Xi \Omega \text{ K } /$  .
- (c)  $\Xi \Omega \text{ K } . . \Xi \text{ A } .$
- (d)  $\Xi \text{ K } \Lambda \text{ H } \Xi \text{ A } \text{ P } \vee .$
- (e)  $\text{ T E K T } \text{ N } ,$
- (f)  $\text{ P X I T E K T } \text{ N }$
- (g)  $\backslash \text{ P X I T E K T } \Omega \text{ N } .$

The letters in all these are of the same form, about half an inch long, and raised.<sup>2</sup> There is no room for doubt that they are all from a single stamp, and one can easily restore for all the reading:—

$\Xi \Omega \text{ K } \Lambda \text{ H } \Xi \text{ A } \text{ P X I T E K T } \Omega \text{ N }$

By a piece of good fortune, the Central Museum possesses a fragment found by Stamatikis at the Heraeum in 1878, containing  $\Lambda \text{ H } \Xi \text{ A } \text{ P X I T E K T } \Omega \text{ N } ,$  evidently stamped with the same die. To remove any lingering doubt as to all these pieces belonging to one lot, it may be added that they are all of the same thickness (.035 m.); that about .025 m. from the top (which is the only original edge preserved) a thin stripe is impressed; that the stamp is in each case placed immediately below this stripe, always on the concave side of the tile, which on this side had a finish not given to the other side; and that the clay in all is rather coarse. After reaching this conclusion with very little difficulty, I had my attention called to a whole tile in the Polytechnikon, found by Dr. Schliemann in 1874 in the village of Chonika, about a mile and a half from the Heraeum. Here stands in full:—

$\Xi \Omega \text{ K } \Lambda \text{ H } \Xi \text{ A } \text{ P X I T E K T } \Omega \text{ N }$

At the bottom of the tile is another stamp:—

$\Delta \text{ A } \text{ M O I O I H } \text{ P A } \Xi$

This is, of course, for *δαμόσιοι ἑρας*,<sup>3</sup> and would mark the tiles (*κέραμοι* being understood) as the public property of Hera.

On the stamped tile from Sparta, above mentioned, we had *πλίνθοι δαμόσiai σκανοθήκας*, an exactly parallel case. So on the Piraeus fragments we have  $\text{ M O } \Xi \text{ I A T T E I P }$

<sup>1</sup> *Athen. Mitth.* II. p. 441; mentioned also by Paris, *op. cit.*

<sup>2</sup> Particularly noteworthy are the small  $\Omega$ , the  $\Xi$  with oblique upper and lower bars, the  $\text{K}$  with short oblique bars, and the very long  $\text{E}$ , which makes  $\text{E K T } \Omega$  descend like the side of a flight of steps.

<sup>3</sup> In some Argive, as well as in Laconian, inscriptions  $\sigma$  between vowels is changed to  $h$ , as in [*Δαμο*]*ia*, Roberts,


*Introd. to Greek Epigraphy*, No. 79, and *Ἐποίη*, No. 81, while in other cases, in the same position it vanishes altogether. Thus in *C. I. G.* I. 1120, *Τελείππος* is used three times for *Τελείσιππος*, and *Θράδλλος* for *Θράδουλλος* (in Collitz und Bechtel, *Argivische Inschriften*, p. 127, the rough breathing is given to these names). See Ahrens, *De Graecae Linguae Dialectis*, II. p. 78 f.





with *πλίνθος* probably supplied. The three Tanagra tiles bear  $\geq \text{O} \mid \geq \text{O} \text{M} \text{A} \Delta$ .<sup>1</sup> The Tegea tile bears  $\Delta \text{A} \text{M} \text{O} \leq \text{I} \text{O} \leq$ .<sup>2</sup> A fragment of brick, also from Tegea, has *-ατης δαμόσιον*.<sup>3</sup>

Another tile an inch thick and of great concavity, found at the Heraeum, has  $\Delta \text{A} \text{M} \text{O} \mid \text{O} \mid$ .<sup>4</sup>

This word *δαμόιοι* does not put us in possession of any very definite information, such as that secured by the English excavators at Megalopolis, who identified the Philippeum by stamped tiles.<sup>5</sup> The whole precinct was sacred to Hera, and the tiles of any building, or even of a drain-pipe, might have been said to belong to her.

One's first thought is of roof-tiles. But the tile that we have entire in the Polytechnikon is very heavy and coarse. It is 1.10 m. long, .51 m. broad at the top, .44 m. broad at the bottom, .035 m. thick. The edges are cut off with a slant, making a cross section of this form: — 

It has been suggested to me that it might be a drain-tile, but so slight is the concavity that it would take at least five such pieces to make a cylinder, and this would be enormously large — a metre and a half or more in diameter. Of course, this might be the case; the tiles, however, would not make joints, but would simply touch one another with sharp edges thus: — 

It is not likely that the edges would have been made to fit so poorly if this had been the end for which the tiles were designed. Neither is it likely that tiles like this were intended to go in pairs, making a flat drain (one being imposed upon the other), for in that case the edges would have met thus: — 

For only one sort of a drain does a tile of this shape seem fit, viz., for an open drain. The lower smaller end of each upper tile would fit into the broader upper end of each lower tile, and make a good drain for a small quantity of water, e. g., the drippings from a roof. But it would be strange if such drains existed in quantity enough to have afforded us almost our only survivals of Heraeum tiles. Furthermore, a system that was fit for an exposed drain was fit to serve as a series of gutter-tiles on a roof (*σωλήνες*). The zigzag edge was perhaps rude, but it could be covered by the *καλυπτήρες*, as may be seen by the annexed cut: —



There is a breadth of only slightly over .14 m. to be covered by the *καλυπτήρ*. It would be just .14 m. if the turned up edges of the *σωλήνες*, for so we may now call them, were cut off straight and not with a slant. If the *καλυπτήρες* were as thick as the *σωλήνες*, they must have had a superficial breadth of .21 m.<sup>6</sup> Perhaps we may assume .25 m. as a maximum. The *σωλήνες* could have at most a breadth of only .30 m. exposed.<sup>7</sup>

This adjustment gave a roof divided in its surface about equally between gutter-tiles

<sup>1</sup> Paris, *op. cit.* p. 112.

<sup>2</sup> *Athen. Mitth.* IV. 144.

<sup>3</sup> Paris, *op. cit.* p. 110.

<sup>4</sup> At Eretria, in 1894, a small fragment of a tile was found bearing apparently

$\Delta \text{HMO} \text{EPETPI}$ .

If  $\Delta \text{HMO}$  be the true reading of the somewhat worn letters, H and M are strangely crowded together. The let-

ters really look more like  $\Delta \text{IMO}$ , an interesting iota-cism.

<sup>5</sup> *Excavations at Megalopolis*, p. 141.

<sup>6</sup> The computation would be as follows: the taper of the *σωλήν* (.07 m.) plus twice the thickness of its edge (.14 m.).

<sup>7</sup> The computation would be as follows: .44 m. — (.035 m.  $\times$  2 + .035 m.  $\times$  2) = .30 m.

and covering tiles. The taper of the gutter-tiles affords an easy way of fitting each one into the next lower. Probably the covering tiles were arranged in the same easy way, the narrow upper end being overlapped by the broad end of the next covering tile. This did not make so fine a roof as is found on buildings having marble tiles, with their delicate *καλυπτῆρες*, or as the roof of the Treasury of Gela at Olympia with its more carefully matched clay tiles. But that it is a probable and natural arrangement is shown by the fact that tiles are now adjusted in the same way. The only difference is that they are now made much smaller. The tile in the Polytechnikon must be twenty or thirty times as heavy as those now in common use on the roofs in Athens. Such tiles were large enough to be held in position by their own weight, without mortar, even in spite of considerable wind, thus making a roof comparable to those made of flat stones, so common in the valleys of Northern Italy, where fierce winds sweep down over the mountain passes.

These tiles might be considered quite old and primitive were it not for the stamp which forbids such a thought. This even forbids our ascribing them to the time of the erection of the new temple of Hera, which was probably begun soon after the destruction of the older temple in 423 B. C., and completed before 400 B. C., to say nothing of the fact that Pausanias mentions Eupolemus as the architect of that temple. The West Building, also, if the signs of its age have been correctly estimated by the visiting architects, could not have borne these tiles on its *first* roof. Its massive character, however, and the short span of its roof would make it a very proper building to carry such heavy tiles.

As these were found in various spots, (*a*) at the north side of the West Building, (*c*) and (*e*) on and near the steps of the East chamber, the place of finding furnishes no clue as to the building to which we are to assign them.

Not to be too exact about the forms of letters on a stamp, and that, too, outside of Attica, where we are always uncertain as to dates of certain forms, we may yet say with considerable safety that the stamp cannot be earlier than the fourth century, B. C. The small *omega* would seem to make it venturesome even to put it into that century at all. But against any very late date may be arrayed the following considerations:—

1. A has a straight crossbar.
2.  $\approx$  has its upper and lower branches very divergent.
3. There is no attempt at ornamentation.

But it is of course possible that the stamp-maker may have indulged in an affected archaism. The irregularity of the ending ΕΚΤΩΝ may be due to that. On the Amyclaeon stamp there is no sign of a later date than 300 B. C., other than a very late form of the *omega* (W). As for  $\approx$  with divergent upper and lower bars, it is found on bricks made perchance a year ago at Chalkis.

The name Socles, a 'Koseform' for Sosicles, is common enough, and affords no particular interest. But the meaning of ἀρχιτέκτων is an interesting question. The word seems, judging from its use in numerous inscriptions, to have the definite meaning of 'supervising architect,' holding office sometimes for the erection of a certain building, as in the case of the temple of Asclepius at Epidaurus, or for a term during which he would supervise all building and repairs, as at Delos. His office is well described by Fabricius (*Hermes*, XVII. p. 17), and by Homolle (*B. C. H.* XIV. pp. 477 ff.), who remarks: "Dans un grand sanctuaire comme celui de Délos, où les réparations, à défaut même de travaux neufs, exigeaient continuellement la surveillance et la capacité d'un homme de métier, on ne pouvait se passer d'un architecte. L'habitude d'attacher d'une façon permanente un architecte aux temples était assez répandue dans le monde grec."



In *C. I. A. I.* 322, Philocles is mentioned as an ἀρχιτέκτων, who with a γραμματεὺς belonged to a board of ἐπιστάται τοῦ νεῶ τοῦ ἐν πόλει, ἐν ᾧ τὸ ἀρχαῖον ἄγαλμα, supposed to be the Erechtheum. In *C. I. A. I.* 324, a year later probably, for work on the same building an ἀρχιτέκτων named Archilochus received 37 drachmas for one prytany and 36 for another. This is pretty clearly a drachma a day. According to the same account, men who worked on columns got as high wages as 20 or even 22 drachmas a prytany. In *C. I. A. I.* 60, ἀρχιτέκτων and ἀρχιτέκτονες are frequently mentioned in connection with what is supposed to be the same work as that above mentioned. In an inscription from Delos, published by Homolle,<sup>1</sup> a certain Philistides receives a payment of one drachma a day. Homolle supposes him to have been the *architekton* who supervised all the buildings at the time on the island of Delos. At any rate, it appears that nothing was done in great building enterprises without the consent and advice of the *architekton*. κελεύει ἀρχιτέκτων is a phrase of very common occurrence in building-inscriptions; it occurs 34 times in the accounts of the *hieropoioi* of the temple of Apollo at Delos, edited by Homolle in *B. C. H.* VI. pp. 6 ff. The *hieropoioi* make payments at the order of the ἀρχιτέκτονος καὶ τῶν ἐπιμελητῶν, *ibid.* pp. 7, 8. In the Eleusinian inscription published by Foucart, *B. C. H.* IV. 226 ff., we read ὅπου ἂν δοκῇ τοῖς ἱεροποιοῖς καὶ τῷ ἀρχιτέκτονι. In the great building-inscription of Lebadea (*Insc. Graec. Sept.* 3073, line 160), we see that a completed piece of work is submitted to the ἀρχιτέκτων, while minutiae like the separate joints are attended to by a ὑπαρχιτέκτων.<sup>2</sup>

In an inscription from Epidaurus<sup>3</sup> mention is repeatedly made of an *architekton* Theodotus, who served for a period of more than six years at a salary of a drachma a day.<sup>4</sup> But the salary of an ἀρχιτέκτων was not uniformly a drachma a day.<sup>5</sup> In the year 279 B. C., at Delos, he received two drachmas a day; but at the same time certain workmen, Nicon and his son, got the same amount for working on a column.<sup>6</sup> At Eleusis, in the time of Lyeurgus, an ἀρχιτέκτων received 72 drachmas for one prytany, or two drachmas a day,<sup>7</sup> while an *epistates* of seven men received only ten drachmas for the same time.<sup>8</sup>

The ἀρχιτέκτων ἐπὶ τὰ ἱερά at Athens,<sup>9</sup> and the ἀρχιτέκτων who had so much to do with the theatre of Dionysus, were undoubtedly supervising architects, whatever other functions went along with that office. The four persons mentioned in *C. I. A.* II. 194, col. c, as ἀρχιτέκτονες, are similarly engaged, although their work is at the Piraeus in connection with the ships.

Two things appear reasonably clearly from this list of inscriptions:—

1. When a man is called an ἀρχιτέκτων, as Socles here is, he cannot be considered to be the head of a tile factory.<sup>10</sup> In that case he would probably have been called κεραμεύς. Socles was doubtless the supervising architect for some particular building or for some one or more years.

2. The other result may seem surprising; viz., that a man who undertook important

<sup>1</sup> *B. C. H.* VIII. p. 305 ff.

<sup>2</sup> Cf. line 53: ἀρεστῶς τοῖς νεοποιοῖς καὶ τῷ ἀρχιτέκτονι (it was easy for Dittenberger to restore in No. 3075 [καθὼς ἂν κελεύῃ ὁ ἀρχιτέκτων]). Cf., also, *C. I. G.* 2266, line 19: ἐπειδὴν δὲ συντελεσθῇ τὸ ἔργον, ἐπαγγειλάτω ὁ ἐργῶνης τοῖς ἐπιστάταις καὶ τῷ ἀρχιτέκτονι.

<sup>3</sup> Kabbadias, *Fouilles d'Épidaure*, p. 78, Inscr. No. 145.

<sup>4</sup> His payment for one year is 350 drachmas; for another it is 353 drachmas.

<sup>5</sup> See the list given by Homolle in *B. C. H.* XIV. p. 478.

<sup>6</sup> Cf. line 71 of the great inscription published by Homolle in *B. C. H.* XIV. p. 389 ff.

<sup>7</sup> *C. I. A.* II. 834<sup>b</sup>.

<sup>8</sup> *Ibid.* col. II. line 9.

<sup>9</sup> *Ibid.* II. 403, line 28.

<sup>10</sup> For the head of a tile-factory to style himself ἀρχιτέκτων would probably have seemed an unjustifiable assumption of dignity. Foucart (in *B. C. H.* VIII. p. 407) understands a brick from Thebes to bear the stamp of the maker's name, adding: *Les marques de ce genre sont encore assez rares en Grèce.*

responsibilities, requiring special knowledge and training, received the small payment of one or two drachmas a day.<sup>1</sup> This may be a good illustration that officials in Greece did not look for great profit. Quite likely, the only reason why the architect at Athens was paid at all, while the board of *ἐπιστάται* with whom he was associated gave their services free, was that he had to give up *all* his time to the work. Perhaps the payment given to a member of the Boulé during his time of actual service was regarded as a proper standard in paying for this sort of work. Probably the only difference between such an *ἀρχιτέκτων* as Socles and Ictinus or Libon<sup>2</sup> was that the latter were engaged in more important undertakings.

A word may here be added as to the practical reason for stamping tiles. Socles, who may of course have had his own tile-making establishment, did not wish to have a pile of his tiles stolen or mixed up with similar tiles.<sup>3</sup> Perhaps it is not without a bearing on such possible purloining that we read an account of the *hieropoioi* at Delos,<sup>4</sup> running thus: 'Bought 200 pairs of tiles; 70 pairs on one building, 44 on another; and turned over to the following *hieropoioi* a remainder of 76.' No mention is made of the deficit of 10.

The tiles were probably formed in a wooden mould, like that referred to in an inventory of Delos<sup>5</sup> as a *τύπος ξύλινος κεραμίδων*. That in some cases the stamp was affixed by a separate impression might seem probable from the fact that the upper stamp with Socles's name was not exactly uniform with reference to the stripe above it. But this may also be accounted for by supposing the metallic stamp, which made the letters so clearly cut, to have been a little loosened from the wood of the mould in some cases. I once saw some moulds at a brick manufactory in Eleusis in just that condition.

## II.

A small, thin flat piece, .08 m. × .05 m., without resemblance to the Socles tiles, yet bearing the letters

Ο Ι Ο Ι Η.

These seem to indicate the same stamp that was applied at the bottom of the Socles tile which is found entire in the Polytechnikon at Athens, i. e., ΔΑΜΟΙΟΙΗΡΑΣ. The dimensions of the letters coincide exactly, their height being .015 m., except in the case of the *omicrons*, which are only half as high.

On a piece of tile painted black, with considerable curvature, are the letters ΜΟΙΟΙ. As the stamp is entire at the right end, it did not in this case have ΗΡΑΣ. Otherwise the letters are the same.

## III.

ΕΤΤΙΝΙΚΟ

Α

On a small piece .12 × .07 m., from the West Building.

After Α what looks like Ρ follows, but this is uncertain. The rest of the lower line is worn away. Coming to this from the pieces just discussed, one would be predisposed to

<sup>1</sup> That an architect was a man of some standing might appear from the words of [Plato] *Anterastae*, p. 135 B: ἐν τῇ τεκτονικῇ τέκτονα μὲν ἂν πρίαιτο πέντε ἢ ἑξ μῶν ἄκρον, ἀρχιτέκτονα δὲ οὐδ' ἂν μυρίων δραχμῶν.

<sup>2</sup> It is a little strange that Pausanias (V. 10, 3) speaks of Libon as a τέκτων.

<sup>3</sup> The stamp with Socles's name, being on the upper end, would disappear when the tile was laid, even if it were a gutter-tile.

<sup>4</sup> *B. C. H.* VI. p. 136.

<sup>5</sup> *Ibid.* VI. pp. 29 ff.



read Ἐπίνικος ἀρχιτέκτων, but it is quite as likely that ἐπί is a preposition followed by a genitive, as in so many of the Corfú stamps containing the names of prytanes (Riemann, *Les Isles Ioniennes*, pp. 47, 54), or in the numerous stamps on amphora-handles collected by Dumont in *Inscr. Céramiques de la Grèce*. The word following the name may be ἄρχοντος, for aught we know.

## IV.

Another fragment still smaller, .09 m. × .07 m., has a name clearly in the genitive. To the left we read:—

Υ Ο Α Ι  
Λ'

It is evident that the top line runs from right to left, and we probably have a name ending in ἰλον. If the next line turns back in a *boustrophedon* order, we may here have ἐπὶ -ἰλου ἄρχοντος or ἀρχιτέκτονος. Such a turning back of the second line is seen on one of the Megalopolis tiles.<sup>1</sup> In our inscription, as in that one, ΔΥΟ is also possible, since the mark at the edge of the fragment, after the supposed Α, looks oblique, and may be a part of a Υ. The reading of the name from right to left has many parallels in stamps. A Megalopolis tile<sup>2</sup> has the name Φιλιπποίμην read this way. The three tiles from Tanagra read in the same way,<sup>3</sup> as well as one of the three tiles from Chios before mentioned. The maker of the stamp in these cases preferred to cut his letters running in the usual order, regardless of the hundreds of impressions which would thus read reversed.

We are sure that in some cases the stamps were not cut as a whole, but were made up of movable letters.<sup>4</sup> On an amphora-handle from the Piraeus,<sup>5</sup> the reading is from right to left; but the letters Ξ, Ρ and Κ are left turned the other way. In turning his letters the workman forgot to arrange them so as to make the direction of the word and of the letter consistent.

## V.

A series of four tile-fragments found on the south slope below the Heraeum just at the close of the work (spring, 1894). These contain:—

ΕΠΙΠΟΛΥΓΝΟ  
ΕΠΙΠΟ  
ΕΤ

They are all impressed on the concave side of fragments about an inch thick. The letters are not raised, as in the other fragments here catalogued, but depressed. The fact that in No. 1 Ε is so close to the Π as not to allow room for the cross-bar of the latter to extend so far to the left as in Nos. 2 and 3 points to a slight difference in the moulds, possibly due to the use of movable letters. The date of this stamp is evidently very late. Whether Polygnotus was an architect or a sacred official for the year is not known.

<sup>1</sup> *J. H. S.* XIII. p. 336, No. 1.

<sup>2</sup> *Ibid.*

<sup>3</sup> *B. C. H.* XI. p. 209.

<sup>4</sup> Blümner, *Technologie und Terminologie*, II. p. 32;

and Dumont, *Inscr. Céram.*, pp. 395, 396, 398, where are cuts illustrating the making up of these stamps, in some of which letters are misplaced.

<sup>5</sup> *B. C. H.* XI. p. 207.

## VI.

VOϐΞΔ δείρου

Two fragments, one .18 m.  $\times$  0.18 m., the other .16 m.  $\times$  .19 m., one with a raised border .05 m. above the stamp, and the other without it, but the stamp is evidently the same on both pieces. The letters are .01 to .012 m. high. We seem to have here a case of a stamp reversed in which the character  $\rho = \rho$  was not reversed like the other letters. It is singular that the break should occur in both pieces at exactly the same place, and so leave us in doubt whether we have the genitive of Δείρος or of some longer name.

## VII.

ΕΠΙΚΟΡ  
ΜΑΚΙΑ

A fragment found at the close of the season of 1895. The field of the stamp is .10 m.  $\times$  .05 m. The letters are .02 m. high. Another fragment bears  $\begin{smallmatrix} \text{ΕΠ} \\ \text{ΜΑ} \end{smallmatrix}$  which seems to be a duplicate of this. ΚΟΡ is probably an abridgment of Κορνηλίου.

## VIII.

ΚΛΟΙΞΘΕΝΗΣ Κλοισσθένης

A fragment of absolutely flat tile, .02 m. thick, .26  $\times$  .25 m.; letters .02 m. high. Another diminutive piece yields ΚΛΟΙΞ. The square *sigmas* cannot belong to a date much before the beginning of the Christian era, and the contamination of  $\epsilon$  and  $\omicron$  would seem to indicate a date much later still. Such a phenomenon in Attica would hardly appear before the third century of our era.<sup>1</sup>

## IX.

A small piece of the upper right-hand corner of a tile with  $\lesssim$  next to the preserved edge. This  $\lesssim$  is exactly like those in the Socles stamps, and the piece agrees in thickness; but this cannot belong to that series unless the Δαμοίοι Ἦρας was transferred to the top.

## X.

Broken a little at the right-hand lower corner. The raised letters are badly worn in the middle of the second line, and at first glance the inscription seems to be easily legible. It runs from right to left, thus:—

VOIΔVΛΔΗ  
ΔΞ >>ΟΞΛΧ  
ΑΛ>>VΟΙ

Hopeful as the first line and the first half of the second look, affording Κλαυδίου Κλεοσθ — —, we must leave the rest unsolved.

## XI.

But the pearl of the tile-inscriptions from the Heraeum is on the fragment of the upper face of the edge of a huge bowl, which must have had a diameter of about three feet. The fragment was found in 1894 "at the West end of the South Slope, behind the

<sup>1</sup> Meisterhans, *Gram. Att. Inschr.*, p. 46, § 16. 10.



retaining wall of the West Building, mixed up with a quantity of early pottery and figurines."

The letters are not stamped so as to appear raised as in those hitherto mentioned, but are incised, cut into the clay when it was moist. The inscribed face of the fragment is .22 m. × .06 m. The letters are .03 m. high.

/ΜΒΕΡΑΜΕΙΝΙ

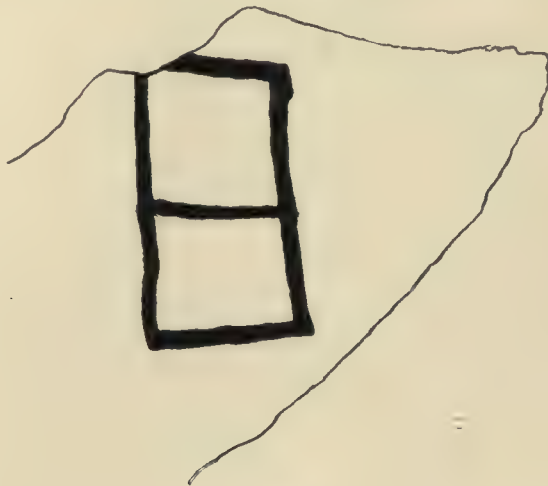
τῶς ἦρας εἰμί

This inscription, judging by Α and Ε, and above all by Μ = σ, must be considerably older than No. XII. of the inscriptions on stone. It must date at least as far back as 500 B. C.

While it may belong to a large amphora, it may also belong to a lustral bowl. This might be the very bowl in which the mad king Cleomenes of Sparta dipped his bloody hands before performing his bootless sacrifice which is graphically described by Herodotus (VI. 81 ff.).

#### ADDENDUM.

Fragment of a roof tile with a closed *eta* stamped upon it. Here reproduced in facsimile in its actual size. As this fragment was found under the flooring of the Second Temple, it must have come from the Old Temple, or from one of the buildings contemporary with it.



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